THIRD SERIES VOL 60 NUMBER 3 JANUARY 1953

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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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*The Banqueting Hall in Whitehall, by Inigo Jones. From an eighteenth-century print*

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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY NUMBER THREE TWO SHILLINGS AND SIXPENCE
66 PORTLAND PLACE LONDON W1 TELEPHONE: LANGHAM 5721-7 TELEGRAMS: RIBAZO WESDO LONDON

JANUARY 1953



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### New Year Honours List

*Baron:* Lord Eustace Percy.

*Baronet:* Sir Ernest Pooley, K.C.V.O., Chairman Arts Council.

*Knights Bachelor:* Professor William Holford [*F*]; William Oliphant Hutchison, President, Royal Scottish Academy; James Miller, Lord Provost of Edinburgh; James F. Mountford, Vice-Chancellor, University of Liverpool; William Pilkington of Pilkington Brothers Ltd.; Herbert Read, D.S.O., M.C., D.Litt.

*G.C.B.:* Sir Ernest Gowers, G.B.E.

*C.B.:* Mr. H. J. Shelley, O.B.E., Chief Inspector, Ministry of Education.

*C.B.E.:* Mr. Ove Arup; Mr. M. B. Blackshaw [*A*]; Colonel F. J. Bywater, Chairman, Codes of Practice Council; Professor Rodrigo Moynihan, A.R.A., Royal College of Art.

*O.B.E.:* Mr. J. H. Brookes, Principal, City of Oxford Schools of Technology, Art and Commerce; Colonel M. K. Matthews, T.D. [*F*].

### Honorary Fellowship

The Duke of Norfolk, K.G., G.C.V.O., and the Earl of Scarbrough, K.G., G.C.S.I., G.C.I.E., have accepted the Council's nomination for election as Honorary Fellows.

### Chevalier de la Légion d'Honneur

Mr. Ralph Walker, Honorary Corresponding Member, U.S.A., has been made a Chevalier de la Légion d'Honneur.

### R.I.B.A. Travelling Exhibitions—'The Architect and You'

The first in this series of travelling exhibitions has been given the title *Home and Surroundings*. As mentioned in the last JOURNAL it illustrates the architect's contribution to the problems of siting, layout and landscaping. A preview of it for London members and others interested will be held at the Royal Institute from 19 to 28 February inclusive (Mondays to Fridays 10 to 7. Saturdays 10 to 5).

Many Allied Societies, Chapters and Branches have already booked the exhibition, but if there are others who wish to show it, they will help in the arrangement of an economical tour if they apply for it at an early date. Delay in applying may make it difficult to fit in visits to additional centres. Allied Societies are reminded that the exhibition will be on view to their representatives at the Allied Societies' Conference to be held on 3 February, between 10 a.m. and 5.30 p.m.

### Exhibition at the R.I.B.A.—'Building in the Netherlands'

The exhibition illustrating Dutch architecture and planning in recent years will be open to the public in the Henry Florence Hall from 25 February to 28 March, the opening ceremony being performed by His Excellency the Netherlands Ambassador. It has been provided by the Netherlands Government with the co-operation of the Bond van Nederlandsche Architecten (the Netherlands equivalent of the R.I.B.A.) and of the Bouwcentrum in Rotterdam.

In many ways the problem of post-war reconstruction has been more difficult for the Dutch people than for the British. Their war damage was more severe and had to include the reclamation of much inundated land. Like us they have a rising and high density population with rival claims on land by industry, agriculture and housing, so that their building problem would have been acute enough without war damage. They appear to be tackling it with methods very similar to our own, so that this exhibition is an opportunity to compare our notes with theirs, as it were. One way in which they are meeting the difficulty of land shortage is by their traditional bold policy of reclaiming it from the sea, and the exhibition will illustrate the planning and housing work of the North East Polder, in addition to normal housing and the replanning and reconstruction of central areas.

### Private Architectural Practice by Unqualified Persons

The Council have set up a committee to review this question which was raised recently at the joint meeting of the Council and Allied Societies' Conference. Further details and the list of members of the committee are given under Notes from the Minutes of the Council on page 116.

### Colour in Schools. Discussion Meeting

A joint meeting of the R.I.B.A. and Illuminating Engineering Society will be held on Tuesday 10 February at 6 p.m. at the Lighting Service Bureau, 2 Savoy Hill, when there will be a discussion introduced by Mr. David L. Medd [*A*] on the Ministry of Education's forthcoming Bulletin 'Colour in Schools'.

### King George VI Memorial Fund

The Council have sent a donation on behalf of the Royal Institute of 250 guineas to the King George VI Memorial Fund to be used as a contribution towards the cost of the architectural work involved in the provision of a permanent memorial.

### Economy in Bricks

The Minister of Housing and Local Government has sent the following letter to the President.

DEAR MR. ROBERTSON,

Good progress was made with the housing drive in 1952. During the present year, with more freedom for the private builder and with the whole-hearted co-operation of all sections of the building industry, we ought to get even better results.

But there is a danger that the supply of bricks in some areas will not keep pace with the need. The brick-makers are doing their utmost to step up supplies. But there is no doubt the available bricks must be wisely used. This is the only way to sustain an expanding programme.

I have already asked local housing authorities to do everything they can to see that bricks are used to the best advantage in their housing schemes. Our Regional Officers are keeping in close touch with them on this. Government Departments concerned with building are also economising in the use of bricks.

It is just as important, however, that the need to use bricks wisely and sparingly should be kept in mind in the design and building of private enterprise housing. The members of your Institute occupy a key position in the industry and I am writing to ask you to convey to them my earnest wish for their help in this matter.

The point is that bricks must and can be saved. Some walling can be cut out altogether; concrete blocks can be used for party and partition walls. Various ways of saving bricks were described in the Bricks Economy Memorandum published by the Minister of Works in October 1952. What I would like you to emphasise to all your members is that it will be in the interest of everybody concerned with building generally and with housing in particular to see that as many as possible of the recommendations in that Memorandum are adopted. This is really urgent.

A further point is that wherever possible people should use local bricks. This would be an immense help; particularly if people concerned with large contracts can give the local brick producers plenty of notice that they will be wanting them.

Will you do what you can to interest all your members in this matter? It is really of vital importance, and your influence will get the results.

Yours very sincerely, (*Signed*) Harold Macmillan.

### Conference on Tropical Architecture

A conference on tropical architecture is to be held at the Bartlett School of Architecture, University College, London, from 23 to 27 March. Mr. Alister MacDonald [*F*] is chairman of the organising committee which includes among its members Professor H. O. Corfiato [*F*], Mr. Frank Rutter [*F*] and Mr. P. Johnson-Marshall [*A*]. The Colonial Office are supporting the conference and Mr. MacDonald represents the R.I.B.A. on the committee.

Application for membership should be made to the Hon. Secretary, Mr. A. A. Adeyemi, the Conference on Tropical Architecture, Bartlett School of Architecture, University College, Gower Street, W.C.1. The conference fee is 30*s*. which includes the cost of a coach trip to B.R.S. and Hemel Hempstead. Hostel accommodation can be arranged at Bentham Hall, 31–43 Cartwright Gardens, W.C.1, at 16*s*. per day full board, excluding lunch and tea. Lunch and tea are obtainable at the College.

We understand that applications for membership of the conference are already being received in large numbers. Those wishing to attend are advised to apply immediately.

### Index to Practice Notes

An index to Practice Notes published in the JOURNAL from January to December 1952 has now been prepared, and copies may be obtained free of charge on application to the Secretary, R.I.B.A.

Copies of the previous indexes for 1945–1950 and 1951 are still available, and may also be obtained on application.

### The British Architects' Conference 1953

The subject to be discussed at this year's conference in Folkestone and Canterbury is *Schools* on which five short papers will be delivered by authorities, two in Canterbury and three in Folkestone. The programme of the conference is still subject to minor alterations but the principal features of it are as follows. Conference headquarters will be at the Grand Hotel, Folkestone. On the evening of Wednesday 10 June members, after calling at headquarters, will meet at an informal reception at the Leas Cliff Hall where the hosts will be the South-Eastern Society of Architects who are celebrating their silver jubilee this year. On the morning of Thursday 11 June members will proceed by motor coach and car to Canterbury where the President will deliver his inaugural address in the Cathedral Chapter House. This will be followed by two papers by Mr. S. A. Johnson-Marshall [*A*], Chief Architect, the Ministry of Education, and Mr. R. H. Sheppard [*F*]. After lunch there will be a short service in the cathedral, followed by a garden party in the grounds of St. Augustine's Abbey. Members will then return to Folkestone for a civic reception given by the Mayor and Corporation. On Friday 12 June three papers, by Mr. C. H. Aslin, C.B.E., Vice President, County Architect, Hertfordshire, by Mr. S. H. Loweth, F.S.A. [*F*], County Architect, Kent, and Mr. F. R. S. Yorke [*F*] will be delivered. The conference dinner will be held at the Simon Langton School, Canterbury, to which transport will be provided to and from Folkestone. The usual programme of tours is being arranged.

A list of hotels in Folkestone was printed in the December JOURNAL and has been reprinted on page 114 of this JOURNAL. The accommodation shown in the list has been provisionally booked until 28 February. Members who have decided to attend the conference are therefore advised to book their rooms at once.

### Direct Election to the Fellowship

The Council have elected to the Fellowship the following Past-Presidents of the Royal Australian Institute of Architects: Alexander Donald Cameron, Albert Earnest Clare, Kenneth Charles Duncan, Edgar Le Blond Henderson, Reginald Summerhayes, Alexander Barr Winning [*L*].

### The Christmas Holiday Lectures

The lectures given in the Christmas holidays for boys and girls of 13 years of age and upwards never fail to attract audiences and to hold their interest. Year after year schools—some of them in the Home Counties—send parties of children, and one can only conclude that this is because the children report favourably.

There might have been some room for doubt whether so scholarly an authority as Mr. Hope Bagenal speaking on the archaeology of architecture would succeed in attracting a juvenile audience and retaining its interest, but this did not prove to be the case. The barrage of questions, most of which were knowledgeable and highly intelligent, showed clearly that the children both understood and were thoroughly interested by what they heard and saw.

### R.I.B.A. Diary

TUESDAY 3 FEBRUARY, 6 P.M. General Meeting. The President's Address to Students. Criticism by Howard V. Lobb, C.B.E. [*F*]. Presentation of Prizes and Studentships.

19–28 FEBRUARY. Preview of R.I.B.A. Travelling Exhibition *Home and Surroundings*. Mon.–Fri. 10 a.m.–7 p.m. Saturday 10 a.m.–5 p.m.

25 FEBRUARY–24 MARCH. Exhibition *Building in the Netherlands* at the R.I.B.A. Mon.–Fri. 10 a.m.–7 p.m. Saturday 10 a.m.–5 p.m.

TUESDAY 3 MARCH, 6 P.M. General Meeting. *The Future of the Past: Some Thoughts on Preservation*. Osbert Lancaster [*Hon. A*].

# Inigo Jones, Architect and Man of Letters


## By Professor Rudolf Wittkower



Read before the Royal Institute of British Architects
9 December 1952. The President in the Chair.

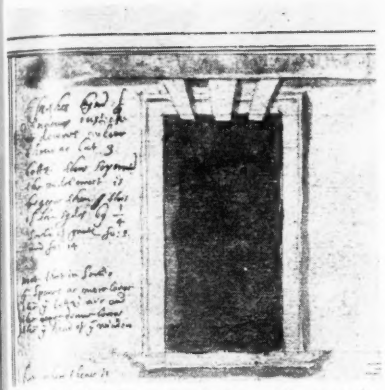



Fig. 1: Inigo Jones, a window with voussoirs. Drawing. Part of a sheet, dated April 1618. R.I.B.A. Library

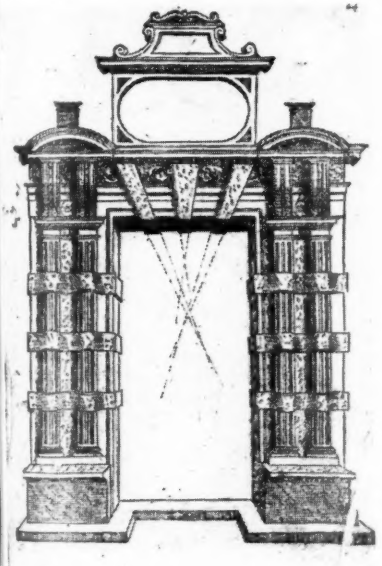


Fig. 2: Gate from Serlio's *Libro Estraordinario*, ed. 1619, fol. 14 (lines prolonging the voussoirs have been drawn in)

I HAVE CALLED this paper 'Inigo Jones, architect and man of letters'. This title, I hope, will not evoke undue expectations. I have not discovered any hidden treasures. I cannot surprise you with the revelation that Jones was a great writer as well as a great architect. He most certainly was not. But he kept abreast with the most advanced intellectual movements of his day, and I am convinced—and this is my theme this evening—that his intellectual pursuits and his work as an architect are indivisible.

It is possible to demonstrate, as is sometimes done, that the development of English 16th-century architecture prepares for the appearance of Inigo Jones; that, e.g., the plan of the English house became steadily more symmetrical, that the hall was given a central position in the plan, that symmetry became important in exterior design as well, that more and more classical and, in particular, Italian detail was assimilated as the century progressed. And yet, everyone agrees that Inigo brought about a revolution, at once so thorough and irrevocable that, whether we like it or not, it determined the course of English architecture for almost three centuries. The history of style cannot account for this phenomenon. There cannot be any doubt that without Inigo Jones English architecture would have developed in some other direction about which it is futile to speculate.

In order to understand the precise character of his revolution, we have to comprehend his mentality as an architect. He travelled extensively in Italy probably in 1601 and again in 1613 to 1614; Palladio inspired him; he discussed architectural problems with the aged Scamozzi; studied and measured the ancient monuments in Rome; and filled his notebook with copies after Italian engravings; his reading in the theory of art and architecture, in philosophy and history was wide and penetrating. If we point out all this, we merely give an account of the external data of his life, which are important enough because they show us where his interest lay; but the sum of all these data does not explain his revolutionary architecture. They still do not explain why his architecture was so different from that of Robert Lyminge or other Jacobean architects, who also used the grammar of classical forms.

In his case the intellectual experience of seeing and reading was transmuted into the artistic revelations of the Banqueting House, the Queen's House and the portico of Old St. Paul's. Now it might be argued that this was due to Jones's genius, a thing beyond historical analysis; and that all we can hope to do is to show which architects or buildings stimulated him: which details of the Banqueting House derive from Palladio and which from Scamozzi. Such historical pragmatism is certainly useful and revealing, but I think we can get a little nearer the essence of Inigo's achievement. This I shall try to demonstrate by studying a few of his drawings with some care. In the drawings, particularly, we can watch his mind at work.

My first example, inscribed April 1618, dates from the beginning of his career as an architect. In this and other similar drawings he was concerned with the size and arrangement of the wedge-shaped voussoirs superimposed on the upper window frame (Fig. 1).[1] The inscription states that the voussoir in the middle should be one-fourth bigger than those at the s. His authority is 'Serlio of goate fo: 5 a. fo: 14'. He refers, in other words, to Serlio's *Libro estraordinario* (of Gates) and when we look up the pages cited by him, we find the same motif occurring in two strange designs of gateways (Fig. 2). In his text Serlio does not mention the voussoirs at all.

Evidently, Inigo operated with a pair of dividers and tried to extricate from Serlio a metrical law for the use of this particular motif. But Serlio was not consistent; for only in his second design is the central voussoir one-fourth broader than the two others. And this is true only at the top and not at the bottom of the voussoirs, while Inigo maintained the same relationship throughout. An additional note implies criticism of Serlio. Inigo states: 'Noat that in Serlio ye Spaces are more large than ye bottei (i.e. voussoirs) are . . .', which is correctly observed. He decided to make the spaces equal to the width of the two narrower voussoirs. But this is not all. The opening of the window is a double square and the width of the frame is one-fifth of the opening. He gave the two outer voussoirs on top the width of the frame and aligned their outside corners with the window opening. From these points he drew the diagonals to the opposite corners below. The point of intersection of the diagonals was made the meeting point of all the other sides of the voussoirs, so that their reduction in width was completely co-ordinated and geometrically defined.

Nothing of this kind was intended by Serlio, as we can see if we prolong the sides of the voussoirs in his design. It is at once obvious how little Inigo owed in this particular case to Serlio. He was concerned with the mathematical integration of the voussoirs into an otherwise straightforward window design and found a beautiful and entirely homogeneous solution for his problem.

I hope you will not accuse me of reading too much into this little drawing, for I have only followed exactly Inigo's own written and drawn statements. Here is a searching mind at work, one demanding clarity, absolute mathematical clarity down to the minutest detail. It is also noteworthy that this drawing, like a number of similar ones, was not intended for execution. Right from the start practice went hand in hand with theory. On many occasions we find Inigo using his dividers to elucidate

[1] R.I.B.A. Burlington-Devonshire Coll., Drawer I, 7. The upper half of the sheet is shown in Fig. 1.

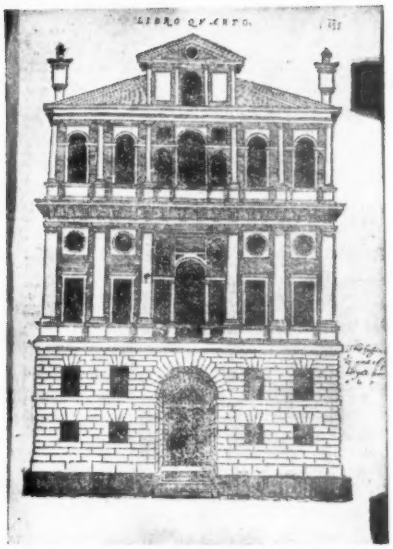


Fig. 3: Page with annotations from Inigo Jones's 1619 edition of Serlio. R.I.B.A. Library

metrical relationships between the parts, and the parts and the whole. I show now another characteristic page from his Serlio[2] (Fig. 3). Here he noted next to the string course: 'This fascia is $\frac{1}{15}$ part of ye height from < to >.' These marks refer to the whole height of the ground floor.

My next example (Fig. 4),[3] belonging to the large series of drawings of gateways, is very similar to the gate Inigo designed for Beaufort House in 1621 and which has survived at Chiswick; it is possible that it was an alternative design for it, in spite of small differences in scale. However that may be, I do not think that it was done much after 1620. Dimensions are here inscribed in feet and inches. On the face of it, there is no particular connection between these measurements, say between 2 ft. 11 in. and 4⅜ in., but in fact there is a link between them, for they are related to the diameter of the column which we may call the 'module' following Vitruvian and Renaissance terminology. The module, measured at the bottom of the shaft, is in this case 1 ft. 5½ in. Most of the measurements appear to be simple multiplications or divisions of the module, and this is true not only for the order itself, but also for the other parts of the design. For instance, the width of the rusticated posts is two modules (2 ft. 11 in.); in the projection, the rustication measures therefore half a module at each side of the column. Every part is subordinated to the same metrical discipline. In the plan the projection from the wall to the front of the column is one module and, since only three-quarters of the columns are visible, the rusticated posts project ¼ module (4⅜ in.). Inigo completed the circle of the columns inside the wall and drew a line as tangent and another cutting the circle into three parts and one part. A second parallel line divides the circle into two-thirds and one-third. These are clear indications that he needed divisions of the module for the dimensioning of details: the height of the rusticated stones, e.g., is ⅔ of a module.

We might easily go into greater detail. But there are one or two inscribed measurements which seem to contradict this interpretation.[4] It is therefore necessary to say a word about the conventional notation of measurements. We may use a well-annotated drawing by John Webb who, having been Inigo's assistant for many years, became the heir to his working method. The drawing of the entablature for the gallery of King Charles's block at Greenwich, dated 1663 (Fig. 5),[5] is inscribed along the architrave '11 inches or 4 parts' and along the frieze and cornice '1′ 1¾″' or 5 parts'. In addition, there is a detailed notation in 'minutes', the sum of which is 40 minutes for the architrave and 50 minutes for the cornice.

We have thus three different types of notation, namely the actual measurements in feet and inches, which are variable but whose relation to each other is constant. This is expressed by the second type of notation which asserts the fixed ratio of one part to the other ('4 parts, 5 parts'); and we have, thirdly, a metrical integration of each part into the whole design expressed in minutes. If we divide the module into 60 parts or minutes, as was customary, 40 minutes mean that the architrave is ⅔ of a module and 50 minutes that the height of the frieze as well as the cornice are ⅚ of a module. It is evident that the division in minutes offered the possibility of working with small fractions of the module. With this knowledge the problematical notations in Inigo's gate design can be defined. Most of Inigo's drawings have the actual measurements inscribed. But I hope you will agree that we understand his intentions only if we interpret them in terms of absolute relationships.

I want to support this further by taking a leaf out of Scotland Yard's book. This design for the north and south entrance into Old St. Paul's, dated 1637 in Inigo's hand, has no annotation (Fig. 6).[6] At the bottom of the sheet is the scale in feet and in the design itself the pricks of the dividers are visible. Now the seven units of the dividers, discernible along the opening, are not the feet of the scale but the module of the pilaster which is about ⅞ of a foot. Inigo also subdivided the width of one pilaster into five equal parts, and all the relationships of the door are derived from the module and its divisions. I am showing this door also because the position and direction of the voussoirs are fixed by lines running diagonally into the lower corners of the opening.[7] Thus Inigo applied here after 19 years some of the findings of the early theoretical study of the window with voussoirs.

[2] His copy is in the R.I.B.A. Library.
[3] R.I.B.A. Burlington-Devonshire Coll., Drawer III, 4.
[4] E.g. 7 ft. 6 in. from the ground to the impost.
[5] R.I.B.A., Burlington-Devonshire Coll., Drawer IV, 15. The drawing is inscribed on top in Webb's hand 'For the gallery Greenwich 1663.'
[6] *Ibid.*, Drawer I, 32.
[7] The point of intersection which marks the centre of the semicircle of the arch is exactly 10 modules above ground.

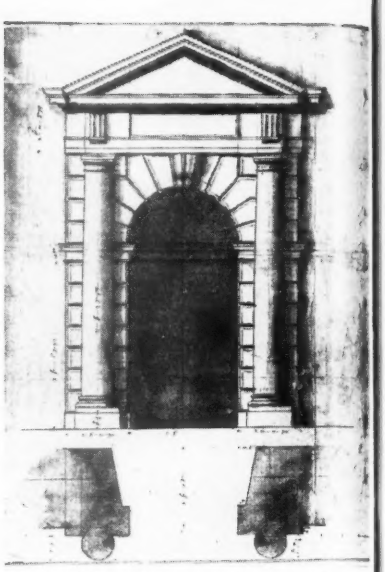


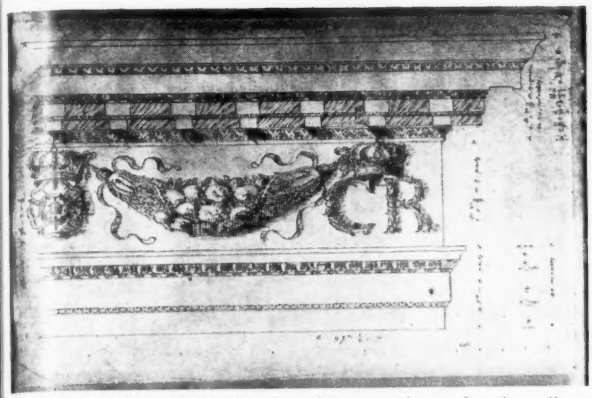
Fig. 4: Inigo Jones, Gateway. Drawing. R.I.B.A. Library

Even in large schemes he harmonised requirements of actual planning and scale with the theoretical demands of absolute relationships. His first design, the date of which is probably 1634, for the west front of St. Paul's is a case in point (Fig. 7).[8] This may not be Inigo's most successful scheme, but it is a particularly suitable one from which to follow his procedure, for here too the pricks of the dividers are visible and also the guiding lines of the design which he impressed on the sheet with a pointed instrument before starting to draw with the pen—a method, incidentally, which was firmly established before the invention of tracing paper.[9]

The net of these incised lines is determined by the module. Vertical lines fixed the position of the main order. The height of the left-hand pilaster shaft was divided into three equal parts, each being 2½ modules. 2½ modules determined also the central line of the outside bay. The horizontal line laid through the lower division of the shaft fixed the height of the doors into the aisles, and the basis of the columned aedicula in the outside bay was fixed ½ module under this line. The pricks at the bottom of the left-hand inner column shaft show that Inigo needed subdivisions of the module. Such subdivisions are clearly visible in the region of the entablature. Here are marked three units for the architrave, four for the frieze and five for the cornice.

After the foregoing it is evident that Inigo related the parts of the entablature as 3 : 4 : 5; and, since three parts equal ½ module, the height of the architrave is ½.

[8] R.I.B.A., Burlington-Devonshire Coll., Drawer I, 31.
[9] A case with late 16th-century architect's instruments in the R.I.B.A. contains a drawing-pen with a pointer at its upper end which was probably used for the purpose described. Mr. Palmes, Librarian of the R.I.B.A., informs me that the technical term for this instrument is 'scorer'.
[10] At Chatsworth. Fig. 8 shows the left corner of the design. The whole sheet is illustrated in M. Whinney's article in the R.I.B.A. JOURNAL, June 1952, p. 287.



Above: Fig. 5: John Webb, drawing of the entablature for the gallery, King Charles's Block, Greenwich, 1663. R.I.B.A. Library.
Right: Fig. 7: Inigo Jones, first design for the west front of Old St. Paul's 1634 (?). R.I.B.A. Library (some of the incised lines and pricks of the dividers have been entered in ink)

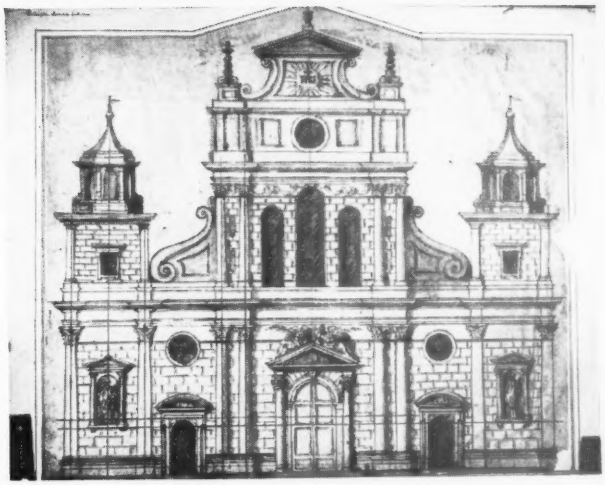


Fig. 6: Inigo Jones, North and South Doors, Old St. Paul's. Drawing, 1637. R.I.B.A. Library (some pricks of the dividers have been inked)

that of the frieze $\frac{3}{8}$ and that of the cornice $\frac{5}{8}$ module, while the over-all height of the entablature is 12 parts or 2 modules. The pricks of the dividers allow us to reconstruct the genesis of the drawing in terms of the module in much greater detail. But I will limit myself to only one more observation, namely that all the orders used in the design are interrelated. The diameter of the upper order is $\frac{3}{4}$ module, that of the columns of the central door $\frac{1}{2}$, that of the dwarfed pilasters of the towers $\frac{1}{2}$, and that of the columns of the aediculas underneath $\frac{1}{4}$ module.

With the key provided by these examples many other of Inigo's schemes yield their secrets. We may look for a moment at the beautiful preparatory drawing for the Banqueting House (Fig. 8).[10] The design is strictly and very subtly developed from the module of the principal order. Inigo divided half the diameter of the left pilaster into three parts, which gave him $\frac{1}{6}$, $\frac{1}{3}$, $\frac{2}{3}$, and $\frac{5}{6}$ of the module to work with. In addition, he marked along the edge of the drawing the height of the courses of the rustication. They are not quite half a diameter and accord with an observation which he had made before Palladio's Palazzo Thiene at Vicenza, and which he wrote into his copy of Palladio's work: 'The sweet rustick aboufe is near half ye diamiter of the Pillor.' It is evident that he conceived even the rustication in relation to the module.

Other drawings, particularly those for Whitehall palace, would show that inside as well as outside—courtyards, interiors and facades—have the module as their common denominator. But I have already trespassed too far upon your patience. My examples have, I hope, made it clear that the basic quality of Jones's architecture is definable. Let us take stock of the position.

In order to make possible the application of a coherent numerical system of relationships throughout a whole building a particular mode of measuring had to be devised. This system could not, of course, be based on inches, feet and yards (or the corresponding Italian units of measurement), but only on a unit of measurement that was adaptable to each individual building and peculiar to it. The necessity for this needs no lengthy comment. Think for a moment of the human figure. An absolute metrical relationship of part to part and of the parts to the whole can only be expressed by postulating a standard of measurement, e.g. the head or the face, as was done by Vitruvius and his Renaissance followers. Then we can say that the total height of an ideally proportioned body should be 8 heads or 10 faces, that the length of the hand should equal that of the face, and so on. Again, following Vitruvius, Renaissance architects accepted the diameter of the column, the module, as the standard unit of measurement, and by multiplying and dividing it, they welded details as well as whole buildings into

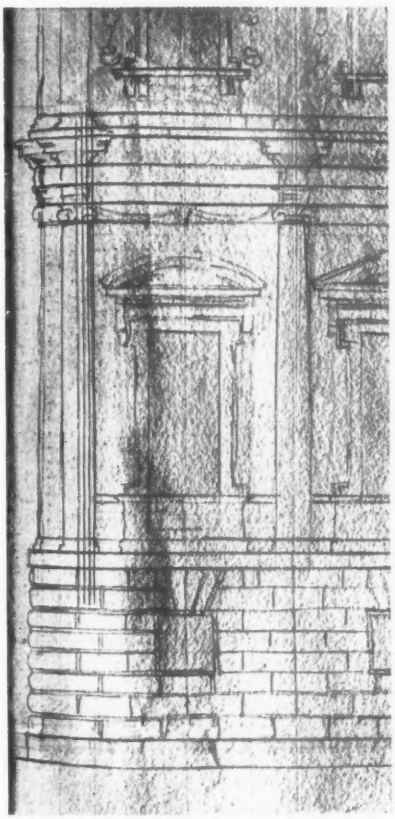


Fig. 8: Inigo Jones, Preparatory Drawing for the Banqueting House. Detail. (Some of the incised lines have been inked.) Published by permission of the Trustees of the Chatsworth Settlement

metrically related units. This was the tradition that Inigo Jones embraced.

It is apparent that in an architecture thus conceived, the orders took on supreme importance, not so much as structural or decorative elements, but as basic features for the metrical organisation of buildings.

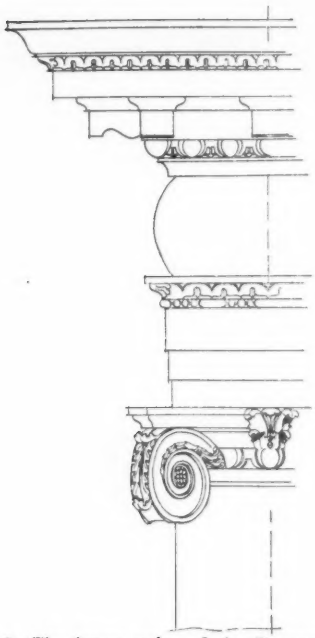


Fig. 9: The lower order of the Banqueting House

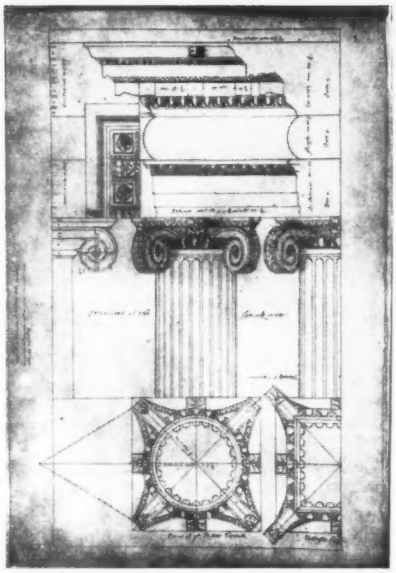


Fig. 10: John Webb, Ionic order. Worcester College, Oxford

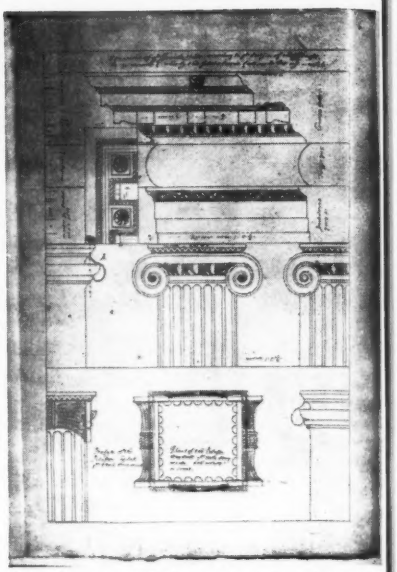


Fig. 11: John Webb, Ionic order. Worcester College, Oxford

Only in this light does it become intelligible why Renaissance and post-Renaissance architects lavished infinite pains on their attempts to reach finality about the proportions and details of the orders, guided by Vitruvius and the remains of antiquity. If we study the results of their labours, if we compare the systems of Serlio, Vignola, Palladio, Scamozzi and the rest, we are nowadays startled by the minuteness of their divergencies. But it was precisely these slight differences which were important to them; they considered the dedication of unlimited time in establishing them to be fully justified.

We are not surprised to find Inigo Jones turning his attention, it seems very early, to an exhaustive study of the orders. The copious marginal notes in his Scamozzi as well as in his copy of Palladio, which he purchased in Venice in 1601,[11] are an impressive testimony to his mastery of this subject. The Ionic order of the Queen's House, the composite order of the upper storey of the Banqueting House or the Corinthian order in the double cube room at Wilton show that he approached the problem of the orders with a fresh mind. When he combined in the lower order of the Banqueting House (Fig. 9) Scamozzi's Ionic capital, where the volutes grow out diagonally from behind the ovolo, with Palladio's Ionic entablature, he must have done it after some careful reasoning. Every written indication, every one of his designs proves that he did not regard Palladio's and Scamozzi's works as pattern books from which he might pick single elements at random.

[11] J. Alfred Gotch, *Inigo Jones*, London, 1928, p. 24. Inigo's Palladio and Scamozzi are now, together with other books from his library, in Worcester College, Oxford.

Moreover, it can be shown that the Ionic order of the Banqueting House was particularly dear to Inigo. You know that there exist about 200 theoretical drawings coming from Inigo's office and mainly drawn by John Webb, probably during the 1640's. For a good many years I believed that the puzzle of these drawings becomes intelligible if one assumes that they were made in preparation for an architectural treatise. Now a pupil of mine, Colin Rowe, has substantiated this assumption in a brilliant but not yet published thesis[12] to which Dr. Whinney has already referred in the June number of the R.I.B.A. JOURNAL. As was customary in Italy, the first book of Inigo's treatise would have dealt with the system of the orders. A fair number of meticulously executed drawings of the orders by the hand of John Webb are extant and among them is the Ionic order (Fig. 10)[13] which is very similar to the order Inigo had used about twenty years before in the Banqueting House.

The display of the drawing on the page and the arrangement of the notations follow Scamozzi, but the relations of the parts to each other and of each part to the module are very close to Palladio. However, there are minor differences and, after what I have already said, we may well believe that it was just these which were of importance to Inigo. And this can be proved. Among other divergencies, the size of the dentils and the spaces between them differ slightly from Palladio's design. A second drawing (Fig. 11)[14] shows, as well as a different capital, trifling alterations of precisely these features, and the text points to the repercussions which the dentils, thus spaced, would have on the intercolumniation. In such a system of the orders there is no room for any arbitrary feature. I think we may now say that a process of careful and searching investigation similar to that discernible in the theoretical sheets must have preceded the choice of the Ionic order in the Banqueting House.

This example shows that with Inigo theory and practice were indivisible, and this unity was implicit in the drawings which I have analysed. The treatise which he planned at the end of his life with Webb's support would have contained the theoretical justification of what he had done in practice, just as his buildings were the result of careful theoretical studies. Theoretical considerations accumulated over a great many years, and he used his Palladio as a kind of notebook into which to enter them. Everyone who goes through these notes must be struck by the profundity and thoroughness of his observations, by his attention to detail and his intimate knowledge of a whole library of architectural source books.

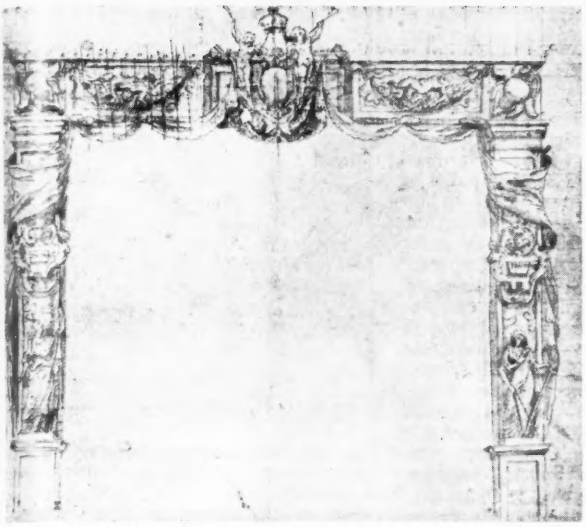
More than once Inigo expressed in an oblique way that theory and practice were two facets of the same thing. In the design for the proscenium arch of *Albion's Triumph* (Fig. 12), a court masque which he produced in collaboration with Aurelian Townshend after his notorious quarrel with Ben Jonson, he showed large personifications of Theory and Practice and explained in the descriptions that 'by these two, all works of Architecture, and Ingining [*sic*] have their perfection.'[15] And in his edition of Aristotle's *Ethics* he noted in the margin

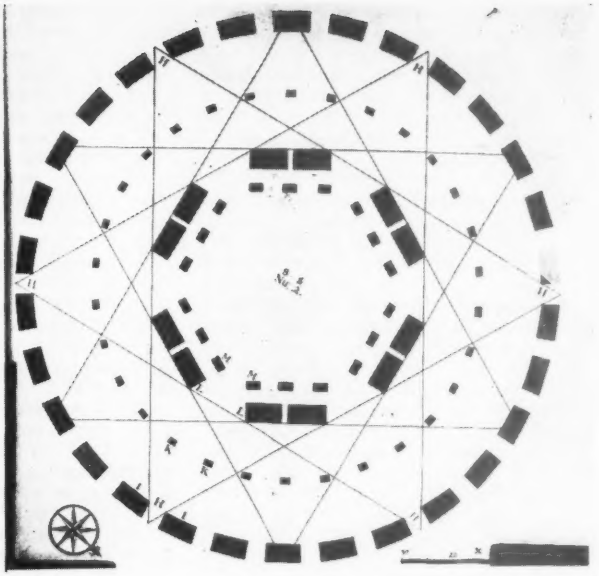
[12] *The Theoretical Drawings of Inigo Jones: Their Sources and Scope*. Copies are available in the Senate House Library, the Courtauld and Warburg Institutes.

[13] Worcester College, Oxford, Series I, 80, 9.

[14] *Ibid.*, I, 80, 3. Inscribed on top: 'Ornament of ye Ionic order according to ye dimensions of the Cartooses by 32 minutes ½ whereby the Intercolumne. falls out to bee iust 2: mod: ½.'

[15] For the Italian derivation of these figures see D. J. Gordon, 'Poet and Architect: The Intellectual Setting of the Quarrel between Ben Jonson and Inigo Jones.' JOURNAL OF THE WARBURG AND COURTAULD INSTITUTES, XII, 1949, pp. 163 ff. *Albion's Triumph* was produced in 1632.





Above: Fig. 12: Inigo Jones, proscenium arch of *Albion's Triumph*, 1632. Published by permission of the Trustees of the Chatsworth Settlement. Right: Fig. 13: Diagrammatic design of Stonehenge. From *Stone-Heng Restored*, 1655

the Aristotelian definition: 'Art is a Habbit to do a thing with right reason,' and he underlined the last word. It was 'right reason'—that is, theory—that raised architecture to the level of art. By insisting on this, Inigo embraced an ideology which had been current in Italy for 150 years.

For a man to whom the Renaissance tradition was alive, a valid theory of art and architecture had to be firmly grounded on a triple foundation. The first requirement was an all-round development of personality. Right from the beginning of his career Inigo endeavoured to live up to this Renaissance ideal of universality which through Baldassare Castiglione's *Cortegiano* and later Peacham's *Compleat Gentleman* had been given widest currency at the English court.[16] As early as 1606 his friend Edmund Bolton presented him with a book which he inscribed in Latin to 'his own Inigo Jones through whom there is hope that sculpture, modelling, architecture, painting, acting and all that is praiseworthy in the elegant arts of the Ancients may one day find their way across the Alps into our England'.[17] Inigo's versatility was, indeed, remarkable: he was also peerless as a theatrical and costume designer, he was an antiquarian of repute and a first-rate connoisseur and, in addition, a civil servant and Member of Parliament.[18]

The second basis on which theory rested was knowledge, specialised knowledge which had to be acquired by thorough study. Inigo firmly believed in intellectual equipment of this kind. He wrote in his edition of Vitruvius as well as in his Italian notebook the motto: 'altro diletto che imparar non trovo' (I know no greater delight than to learn).[19] His architectural library[20] contained, apart from the works by Vitruvius, Palladio and Scamozzi, those by Alberti, Serlio, Cataneo, Zannini, Rusconi, Philibert de l'Orme and probably others which—like his Vitruvius and Serlio—never reached the shelves of Worcester College.

Thirdly, theory without a grounding in philosophy was unthinkable. Like his classically trained contemporaries, Inigo tried to lift the veil which hides the secrets of the universe by studying Xenophon and Aristotle, Plutarch and Plato, Plato above all. Everything we know about him reveals that he read his philosophy for use. He lived in a circle which included men like John Donne and Sir Henry Wotton, for whom Plato's concept of a universal harmony founded on numbers was still an article of belief, and the direction in which his mind moved is indicated by the extensive annotations in his Plato and Plutarch and also his Alberti of passages referring to harmony and music.[21]

It seems, therefore, not too bold to say that his theory of architecture, had it ever been written to accompany the theoretical drawings, would have reflected his universal aspirations by branching out into many fields; it would have been learned, taking into account as much precedent as possible; it would have been focused on the 'fundamental Maxim, That the Images of all Things are latent in Numbers', to quote from Wotton's *Elements of Architecture* (1624). In any case, it must have been this conviction that furnished the philosophical basis for his approach to architecture. It is also a pointer that by far the largest number of notes in his Palladio are concerned with proportion. These notes confirm that for him architecture was first and foremost the art of metrical relationships in space. And we have seen that he always had his dividers ready at hand in order to investigate and pin down such relationships.

This metrical approach to architecture also explains what appears now his unintelligible verdict on Stonehenge. In 1620, while at Wilton, Inigo received the royal command to investigate Stonehenge. His conclusion that Stonehenge was the ruin of a Roman temple was published after his death by John Webb 'from some few indigested notes' by Jones (as Webb declares in the preface).[22] Nevertheless, it can be shown that the main arguments, if not the learned commentary, were Inigo's. He had carefully measured the ruins and this led him to pronounce that 'betwixt this Island of Great Britain and Rome itself there's no one Structure to be seen, wherein more clearly shines those harmonical Proportions, of which only the best Times could vaunt, than in this Stone-Heng'. This is the key-note. He soon became convinced that the whole lay-out of Stonehenge was based on four intersecting equilateral triangles corresponding to the ancient theatre reconstructed by Palladio for Barbaro's edition of Vitruvius (Figs. 13, 14), and that, moreover, the proportion of the inner to the outer ring tallied with that of the cella to the colonnade in Vitruvius' Peripteros. So Inigo's conclusion

[16] Castiglione's *Cortegiano*, published in 1528, was first translated into English in 1561; Peacham's work appeared first in 1622.

[17] Gotch, *op. cit.*, pp. 44, 251.

[18] More than once Ben Jonson satirised Inigo's universality. In the anti-masque of *Neptune's Triumph* (1624) he made him appear in the role of the master cook:

> . . . He designes, he drawes,
> He paints, he carves, he builds, he fortifies,
> . . . . . .
> He is an *Architect*, an *Inginer*
> A *Souldier*, a *Physitian*, a *Philosopher*;
> A generall *Mathematician*!

See Gordon, *op. cit.*, p. 162.

[19] See Joan Sumner Smith, 'The Italian Sources of Inigo Jones's Style,' BURLINGTON MAGAZINE, July 1952, p. 204. Inigo's Italian 1567 edition of Vitruvius as well as his notebook are now at Chatsworth.

[20] See the catalogue of his books at Worcester College, in Gotch, *op. cit.*, pp. 248 ff.

[21] Extracts in Colin Rowe's thesis, pp. 308 ff.

[22] *The most notable Antiquity of Great Britain, vulgarly called Stone-Heng, on Salisbury Plain, Restored*, London, 1655.

was almost inescapable. As an antiquarian and as an architect he thought in precisely the same terms.

No clearer testimony than his blunder about Stonehenge could be imagined to demonstrate that Inigo forms a link—and not the last—in that learned, humanist and essentially Platonic tradition which springs from Leon Battista Alberti; who, paraphrasing Vitruvius, had defined beauty 'the harmony and concord of all the parts achieved in such a manner that nothing could be added or taken away or altered except for the worse'. If you alter these definite and organic relationships at any point of a building, you disturb 'tutta quella musica'—as Alberti once wrote. Many of the best Italian thinkers and artists of the following generations accepted this rational mathematical interpretation of beauty which implied that every part in a building down to the minutest details has its fixed size and shape, and Inigo Jones still subscribed to it. For him, as for his Italian peers, a building was an organic whole, completely definable in terms of metrical relationships. He was the first Englishman to whom this concept had become an inviolable truth, and it is this approach to architecture that gives his buildings their over-all quality of lucidity, poise and harmony. His theoretical deliberations, founded on the metaphysical belief in the universal efficacy of number, buttressed and nourished by the study of Plato and Vitruvius, Plutarch and Alberti, Palladio and Scamozzi, and so eloquently expressed in his drawings, seems to provide the key to his single-minded quest for order and clarity in practice. This metaphysical belief, I submit, accounts for the seriousness and vitality of his classicism.

## DISCUSSION

**Professor Geoffrey F. Webb, M.A.** [*Hon. A*]: We have been listening to something which has been very rare in the history of architecture, that is, a real attempt by an historian to understand the mind of one of the great architects of the past. Nearly always, and to some extent inescapably, when we write architectural history we are trying to look at the work of the master we are studying in order to get nourishment for our own wretched little psyches, and not to try to understand his point of view. We may even, if we are still more degraded, study his work simply to get hints and tips from it! A great deal of study of Renaissance architecture, which no doubt has been in a left-handed way very good for the student, has been undertaken for the wrong reasons and not for the reasons which Professor Wittkower had in his mind when he approached the study of Inigo Jones. He was trying to present and has presented Inigo Jones to us in the context of the mental life of the time, and that seems to me to be extraordinarily important and interesting. Moreover, it is the greatest compliment that this Institute could pay to Inigo Jones in this tercentenary year of his death.

Some months ago certain members of the Ministry of Works came here not only cap in hand but having in their hands a laurel wreath to put on the bust of Inigo Jones which is kept in the Institute. They were behaving, as it seems to me, in a very proper way, because Inigo Jones was the first head of the Ministry of Works in its earlier form, that we can recognise as being something like ourselves; I do not mean like myself but like, shall we say, the men of our time whose minds we can enter into. I should not like to attempt to enter into the mind of Henry Yevele, who may I suppose be regarded as a remoter predecessor. Inigo Jones was not only one of the foundation heroes of the Ministry of Works; he was also one of the foundation heroes of your profession in this country.

Professor Wittkower referred in his paper to the great quarrel between Inigo Jones and Ben Jonson, and as has been pointed out, that quarrel was largely on the status of architecture as a liberal art. The studies with which Inigo Jones was so much concerned and which Professor Wittkower has so brilliantly described to us this evening were exactly those which Inigo Jones regarded as justifying the claim of architecture to be one of the liberal arts. Ben Jonson in this matter was a very extreme Tory and did not hold with these newfangled Italian ideas about the status of the architect or that the architect should meddle with such subjects, because architects were a lesser kind of creature; they practised a mechanical art, and you did not study Plato if you practised a mechanical art. I hope that the President of this Institute will impress on his fellow members that they must live up to the standard of learning and philosophical preoccupation which Inigo Jones, an early member of their profession in this country, set up for them.

One point which struck me in listening to Professor Wittkower was a question which I cannot answer, namely, whether there was anything in the generation immediately preceding that of Inigo Jones which anticipated this Platonic movement. I suspect not, but it is possible. What concerns me particularly is what happened after. It seems to me that Inigo Jones was possibly the first person to consider architecture in this way and certainly the first person in England to adopt this Platonic, philosophical tradition in relation to the visual arts among Englishmen. Professor Wittkower, in his book *Architectural Principles in the Age of Humanism*, suggests that this tradition continued in England. He mentions Shaftesbury, who was indeed a Platonist, and then one finds gradually in the eighteenth century first Hogarth and then Burke breaking away from this earlier Renaissance tradition. I believe that we can see the signs of that departure in the generation immediately following Inigo Jones. I believe that Inigo Jones was, in a sense, the last person to do this with any profound conviction. The next generation, the generation of Christopher Wren, conceived of mathematics in a way which was the immediate ancestor of our way of conceiving of mathematics

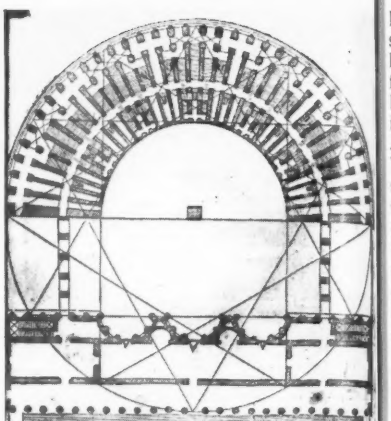


Fig. 14: Palladio's reconstruction of the ancient theatre. From Barbaro's 1556 edition of Vitruvius

today. In his early youth Wren translated into Latin Oughtred's great tract on algebra, not merely as an academic exercise but as a serious job of work, in order to make it available to foreign scholars. Wren's idea of mathematics was not looking back to antiquity through the fifteenth century; it was the mathematics of his own generation and the generation of Newton and it looked forward ultimately to the breakdown of that type of philosophy of which Inigo Jones was obviously so ardent an exponent.

It seems to me that there are one or two instances which one can cite from the generation of Wren which show this breakaway. When they began to cite Thomas Hobbes and when Nicholas Hawksmoor said: 'A strong judgment and a good fancy are what we mean by following the ancients', they were breaking away from this universal Platonic system. They were beginning to move towards the subjective attitude to proportion which we find in Hogarth and in Burke.

In putting that forward I am merely trailing a coat in the hope that Professor Wittkower will deal with it in his reply to the discussion. I know that that is a rather outrageous thing to do, but I feel that I should like to draw him on that particular point.

In conclusion, I should like to say that I am deeply grateful to you, Mr. President, for giving me the opportunity to be here this evening, and I congratulate you and the Institute on the speaker whom you have found to commemorate this great architect. I congratulate Professor Wittkower on the results of his thorough and prolonged study of the works of this master. I hope that he will continue to study this master, and then I and one or two others whom I see in front of me will very rightly and properly be put out of business!

**Mr. John Summerson, C.B.E., B.A.(Arch.), F.S.A.** [*A*] (Curator of Sir John Soane's

Museum), in seconding the vote of thanks, said: Early in his paper Professor Wittkower said that he thought it would be futile to consider the direction which English architecture might have taken had it not been for the appearance of Inigo Jones. Of course, I know what he meant. There is always a certain futility in considering the 'might-have-beens' of history. On the other hand one can I think with some fairness construct what the position would have been. If we take at one end of the story the York water-gate and, at the other end, about forty or fifty years later, Nottingham Castle, we get a quite substantial picture of the kind of architecture which would have flourished in this country had there been no Inigo Jones. Between those two poles one might place some of the works of Nicholas Stone and the better masons of his time. It would have been a rather theatrical, very loose and often somewhat woolly kind of Baroque, stemming from France and Flanders, something approaching the kind of architecture which one sees in paintings by Rubens. That is what we might have had, and I think against that hypothetical background Inigo Jones stands out in relief with quite extraordinary force.

The York water-gate, apropos of the subject this evening, is a very interesting case. I do not suppose there are many here who still believe what the brass plate on the site says, that the York water-gate was designed by Inigo Jones. A much more likely author, in view of a certain amount of external evidence, would be Sir Balthazar Gerbier, but it has always been called an Inigo Jones design, and I suppose the reason is that there is a drawing of the water-gate in Webb's hand in the Burlington-Devonshire collection; and no doubt the 18th-century Palladians, pinning their faith to the existence of that drawing, regarded it as excellent evidence that this was one of the British classics and was authentic Inigo Jones. On the strength of that, they copied and adapted it, as you know, rather liberally.

What are we to make of this drawing of the water-gate? Some years ago I tried to solve this problem, and I took a reproduction of Webb's drawing of the water-gate and placed it side by side with a measured drawing of the water-gate. The result was rather remarkable. There was an elegance about the Webb drawing; perhaps partly due to the charm of the draughtsmanship but not I think entirely, because the contrast is so impressive that one immediately looks for some salient modification of the design, but there is no salient modification. Then, if one takes a pair of dividers and tests the principal ratios in the Webb drawing and in the measured drawing, all one finds is a large number of very slight alterations in the Webb drawing. Each of the changes is very slight indeed, and it is the totality of those changes which makes the Webb drawing more elegant than the measured drawing. At the time I had the idea that this drawing must have been made by Webb—or perhaps he was told to do it by his master—with a view to drawing the water-gate as it should be drawn, that is to say, according to Inigo Jones's method. In view of what Professor Wittkower has said this evening, I think that is probably right and that this was a theoretical thesis drawing. Webb took the concept of Gerbier, the rather crude and probably empirically worked-out suggestion, and made a corrected version of it, employing the Jonesian method.

If that is the case, I think that this drawing of Webb's is very interesting, because there we have first of all the conception of a not very brilliant architect, a conception of considerable charm, a conception borrowed, I suspect, from de Brosse's Fontaine de Medicis at the Luxembourg in Paris. On the one hand we have that conception in its executed form in Embankment Gardens, and on the other hand we have it in this very much more refined setting up on the Jonesian method. The striking thing is that, although there are no substantial changes, the result is that in the Webb drawing the design is really much finer.

With regard to the remark in the paper that Inigo Jones might have clarified his theory in the thesis which it appears that he was preparing, I wonder whether he would have done so. In reading Professor Wittkower's book on the humanist architecture of the 16th century, I was very much struck by the way in which Palladio left his system of proportion implicit in his published works, and never explicit. Palladio left it to Professor Wittkower to worm the thing out by inferences from Italian philosophical thought and Italian musical theory. I wonder whether Inigo Jones would have been equally reticent about his system, and I wonder why it is that during the whole of the 16th and 17th centuries there is so little written exegesis of architectural methods.

I am profoundly grateful to Professor Wittkower for his paper. He is a man who, in about half a dozen short papers, mostly embedded in the dimmer archaeological publications, has contributed more to the history of the architecture of this country than have all the illustrated books which have rolled off the press in the last ten years. I have the very greatest pleasure in thanking Professor Wittkower once again for a great contribution.

**Mr. A. S. G. Butler** [*F*]: How pleasant it would be not to be a practising architect, so that one could have time to study and get within a mile or two of minds like that of Professor Wittkower. It is all very well for Professor Webb to say that we must all take up Plato. How can we do so, when we spend most of our lives in struggling with Government officials, not to mention trying to be architects?

There is an aspect of this meeting which has given me immense pleasure. Having fidgeted, as I might call it, for about ten years over the work of the late Sir Edwin Lutyens, I have become very much attached to this theory or idea of metrical discipline. I think that was Professor Wittkower's phrase, and I thought that it was a very good one indeed. I think it would be grand if we could encourage this idea more. I do not mean the orders; I mean Order with a very large O. On the other hand, we might surreptitiously now and then look at the orders, because during this fidgeting over the work of Sir Edwin Lutyens I had to spend a whole week engrossed in the Roman Doric order and its delicious innuendos. Merely as an exercise in thought and art, it is something to study an order like that, and if we jettison all these beautiful things which have been built up over the centuries we lose such a lot of fun.

**Mr. G. A. Jellicoe, M.T.P.I.** [*F*]: I should like to support the vote of thanks to Professor Wittkower. I have enjoyed his works for years, as much as anything in order to study what not to do; because I think the impact of the Renaissance upon us is so terrific that if we do get consumed by it we may want in some ways to recall it in our work. It is entirely beyond us to do so and I believe that we live, philosophically speaking, in a totally different world. In studying the Renaissance, especially through Professor Wittkower, it is interesting to try to reason in the same way as a philosopher has always reasoned in the past. It does not seem to me to matter whether that philosophy is correct or not, as long as one *has* a philosophy, which can then be interpreted into architecture. The essential point is that it must be related to the known facts of the time.

It seems to me that Renaissance architecture was based on two things, one being the human figure and the other the universe; the flowers, plants, and so forth, of the mediaeval world seemed no longer to exist. It was the human figure and geometry, and architecture was a reconciliation of the two. Since that time the human mind has dominated everything so much that the human figure has receded into the background and the human mind now wishes to operate through the machine and not through the human figure. We therefore find that the rich quality of Renaissance architecture, which was partly due to the human figure, not only has now gone out of architecture but is actually repellent to it.

The second point is how far is the geometry of the Renaissance related to the present time. I feel that throughout the ages, right up to the 18th century, there were eternal values which one can trace right through the Greeks and Palladio. Are those eternal values in fact eternal? I feel that in the South Bank Exhibition, for instance, the idea of eternal values was thrown into the air and in one beautiful cascade scattered all the laws of order that we have known up to now. The parts are now gradually descending, and no doubt when they have descended they will form their own order, which may or may not be the same as the one of the past. As the known facts of the modern world are different and are more deep than the known

facts of the Renaissance world, so it is possible that the geometry which satisfied the Renaissance world is no longer satisfying the modern world.

**Mr. W. A. Eden, F.S.A.** [*F*]: I should like to add my thanks to Professor Wittkower and to confess that, as I listened to him, could not help thinking of a passage in our Inaugural Address, Mr. President. that address you gave your own modern rsion of the terrifying list of qualifications ich Vitruvius laid down for an architect. ink you ended by saying that an archi- ctural journal must be more than the architectural equivalent of the LANCET and the PRACTITIONER. Obviously Inigo Jones had read more than the architectural equivalent of whatever medical journals existed at that time.

I should like to ask Professor Wittkower a question. In referring to the proportion of one of the window drawings that he showed early in his paper, he said I think that the figures of the parts did not add up to the total dimensions. We know that in theory the Italians like Leon Battista Alberti based their ideas on the Pythagorean theory of proportions, but did they actually in practice follow those mathematical relations which they refer to and which are noted on some of their plans? In other words, have the drawings anywhere been checked with the actual buildings?

There is a further question that I should like to ask and which is related to that one. I think that Vitruvius in his Sixth Book refers to the necessity of varying the mathematical proportions according to the situation of the part of a building or of the building as a whole. I think he says that things appear differently in a confined space or on the ground, and so on. I should like Professor Wittkower to say something about the fact that architecture has to be seen and that these relations are seen relations, not measured relations, and I should like to know whether he has found anything in his study of Inigo Jones related to this problem of the correction of the mathematical proportions in order to present an appropriate appearance.

**Professor W. G. Holford, M.T.P.I.** [*F*]: There is one question that I should like to add to the many that have already been put to Professor Wittkower. He asked himself: 'In what does the genius of Inigo Jones really consist?' and, as I followed his detective story as he first suspected and then proved points about the symmetrical symphony that he was building up, a slightly irreverent recollection suddenly came to me which I thought was a clue. I want to know whether he also thinks that may be so.

I lectured in the University of Genoa not very long ago, and when I was introduced to the Director before the lecture he told me his name and I was somewhat startled, because it was the name of the political head of the Italian Communist Party. He saw that I looked startled and he said: 'It is all right; I am his brother; I am only a mathematician.' His brother, besides being the political head of the Italian Communist Party, was the editor of the Italian journal, UNITÀ. The Director said to me: 'My brother is a greater mathematician than I am, because, whereas I add one thing to another and make two things, he adds one thing to another and he gets *unità*.' I wonder whether that really is the difference between the man who uses a module (it may be the 3 ft. 4 in. module or it may be any other kind of module) and hopes that by putting mathematically related parts to one another he will achieve a design, and Inigo Jones who saw the end before he decided on the means. On the other hand, was it really his Platonic conception of unity which made Inigo Jones's genius? Did he know or did he have a conception of the whole design before he started using these regulated means in order to achieve it?

**Dr. M. Whinney:** I will not add any questions now to the many which Professor Wittkower has to answer. I will leave that for another time. All that I want to do, since Professor Wittkower has already taught me so much, is to echo Inigo Jones's words and say: 'I know no greater delight than to learn'; and I should like to thank you, Mr. President, for having given me an opportunity to learn once more from Professor Wittkower.

**Professor Rudolf Wittkower:** I have been moved by the kind reception which you have given to my paper, but I will not say that I have been equally delighted with the questions that you have asked, because they might start a discussion which we could easily carry on for a couple of hours. I may say that most of the contributors to the discussion said things which I hoped would be said and asked questions which I had asked myself, but which I had put aside because I could not answer them or because there was not time to go into them.

I would say that Professor Webb was, in my opinion, right in pointing out that the Newtonian position, to which Wren belonged, initiated something definitely new, but in spite of that there was a continuity of what we might call the Platonic position which perhaps led to academic sterility at the end; however, I would not like to come to a decision on that. An interesting point is that, when I had begun to study Inigo Jones and had found some of the things which I have shown you here, I thought that I must look into the later theory and see what people like Chambers and even people like Papworth in the middle of the 19th century had said. I found that for them the tradition was still alive; perhaps not in the sense in which it was alive to Inigo Jones, but it persisted even if the philosophical background had lost its impact, and that I think is very important.

That leads me to Mr. Jellicoe's remarks. He raised an extraordinarily important point. I have been discussing Inigo Jones simply from an historical point of view; I did not want to draw any conclusions about the use of modules in modern architecture. I fully agree with Mr. Jellicoe that our philosophical background is entirely different nowadays and that it would probably be a futile task to try to revive the Platonic tradition to which Inigo Jones belonged.

I am particularly grateful to Mr. Summerson for the able picture which he painted of English architecture as it might have been without Inigo Jones. Mr. Summerson has a much greater knowledge of the details of English architecture than I have, and I am sure that he could even build that imaginary architecture. The story of the York water-gate is extremely interesting. What Mr. Summerson said throws more light on what I was trying to demonstrate tonight.

Mr. Eden raised several important points. One of the two with which I wish to deal here is the question of whether one can check up on the Pythagoreo-Platonic use of proportion in actual buildings. What is the position between theory and practice? That is an almost unanswerable question. I have tried to go into this a little when studying Palladio, but it is beyond the capabilities of one man or even of a whole team of people to arrive at final conclusions. It is very difficult to decide whether the discrepancies which occur, particularly in the case of older buildings, between the measured drawing and the executed building are just fortuitous or are actual digressions from the theory. Each case should be discussed on its own merits.

Another point which Mr. Eden raised is that architecture has to be seen. The optical element in architecture is extremely vital. There is an undercurrent right through the history of the theory of architecture, coming down from Vitruvius, concerned with the importance of the optical element, and in Inigo Jones's notes in his copy of Palladio there is a reference to this point. No one has ever studied this problem in any detail, but it is well worth while studying, because it is quite evident that there is a contradiction between the absolute character of Pythagoreo-Platonic harmonic measures and the constantly varying visual impression received by a visitor to a building. That contradiction, as far as I can see, was never resolved in any classical theory. It was not resolved by Vitruvius nor in the Renaissance, nor was it resolved in Inigo Jones's theory, but it is a subject of extreme interest and importance.

The most difficult question was that asked by Professor Holford, and I really feel unable to answer it. In what does the genius of Inigo Jones consist? Perhaps Professor Holford implied the answer himself, namely, that Inigo Jones' genius consisted precisely in the way he applied metrical symphony. It is of course clear that neither the application of Pythagorean numbers nor of the module can make a man a genius. But they are like the scale in music, which is the basic material with which the composer works. They were the basic material of Inigo Jones, as of Palladio, and it was the symphony produced from this material that made the unity of the work.

# Prestressed Concrete

By O. J. Masterman, B.Eng., A.M.I.C.E., A.M.I.Struct.E.

A Science Lecture at the R.I.B.A. on 16 December 1952, Mr. P. G. Fairhurst, Vice-President, in the Chair

THERE HAS ALREADY been so much written and spoken about this new structural technique that this paper will only attempt to deal with outstanding points, giving emphasis to those which particularly interest the architect. So much development has taken place in this country since Mr. Elliott gave his lecture to the R.I.B.A. in October 1948 that it is now possible to cover the subject fairly adequately without using examples of work from abroad. Prestressing on the Continent was many years ahead of this country and very many important structures have now been built for quite a number of years; these have been well described and illustrated in many technical journals so it is proposed in this paper only to deal with British work. Prestressing has been successfully used in a very great variety of structures such as bridges and buildings of all kinds, reservoirs, roads and runways, pipes, piles and pylons, slabs, beams and girders, and samples of all these applications can be found in this country today.

In spite of a lead of about fifteen years which continental engineers, headed by Freyssinet, had secured, the development and practice of prestressing has come forward very fast in the last five years in this country, and at the present time actual prestressed works known to have been constructed include 65 bridges, 24 factories, office buildings and canteens, 10 garages, 17 housing contracts, 14 liquid retaining structures, 3 roads, 44 schools, 12 sea and water works and 81 miscellaneous structures; a total of not less than 270 jobs.

Prestressing provides the engineer with a means of using his materials more efficiently than heretofore when designing in concrete. This has two advantages; first, it permits of substantial reductions in the amount of steel and concrete required, and this in turn leads to savings in cost. The saving in concrete has particular relevance in relation to precast components because it saves handling and transport costs, but it also enables concrete structures to be lighter and more elegant, and is often valuable for bridge and floor work by reducing headroom. The saving in steel is very great and a prestressed structure will usually contain about one-fifth of the amount of steel in the corresponding reinforced concrete structure, and perhaps one-tenth of that in a steel structure. This has particular importance in this country at the present time when steel has become scarce and costly; and it is the factor which has contributed most in the early stages to establishing prestressed work here. These substantial steel savings are not, however, fully reflected in the cost because special high tensile steel must be used, which is about two and a half times as expensive as mild steel. In the case of concrete, where material savings of perhaps 30 per cent. may be obtained as compared with reinforced concrete, this again is partly counter-balanced in the final cost by the higher quality concrete which must be used and by the stressing operations. It can, however, be said that prestressed structures are finding no difficulty in competing in cost with other constructions. More details on costs will be given in a later section.

Concrete is a material which has been known and used for building for many centuries, although not of quite the kind we use now, which depends on Portland cement, for which the first patent was taken out in 1824. It is an important disadvantage that its tensile strength is very low and quite disproportionate to its compressive strength, which can be very high. This means that it could only be employed for heavy gravity structures until some means of supplying the deficiency in tensile strength was found. This came when mild steel bars were inserted in the tension zones, thus giving us reinforced concrete, the use of which has been developing steadily during the last half century. This advance in concrete engineering by the use of reinforcement enabled all kinds of structures to be built of concrete because it was now possible to deal with structures and components subjected to bending.

Reinforced concrete has been of inestimable value to architects because of its mouldability and because it could be arranged to meet all their requirements and did not have to be manufactured in standardised shapes and sizes. However, great as have been the benefits realised from the introduction and development of reinforced concrete, it is now recognised that in this form the materials are not always used to the best advantage. It is true that steel provides for the absence of tensile strength in the concrete, but owing to the very different elasticities of the two materials some cracking cannot be avoided when the materials are used with reasonable economy. This cracking, which cannot normally be seen and which in properly designed structures is not harmful, does however impose important restrictions on the designer. In the first place he is obliged to keep his steel stresses low enough to ensure that the cracking remains small and in the second place he has to ignore in his bending calculations all the concrete below the neutral axis. The use of high tensile steel is not a solution to this problem because it allows more cracking to take place. It is just at this point that the benefits of prestressing begin to unfold because the system is one which prevents any tension occurring in any part of the concrete under working conditions.

**Methods of Prestressing.** *At the lecture the author made a simple demonstration at this point to illustrate the prestressing principle without using engineering explanations and stress diagrams.*

The essential principle is then to apply compressive stresses to the structure *before* it is loaded in such positions and of such magnitudes as to neutralise the tensile stresses which the loading will cause; hence the name 'pre-stressing.' These compressive stresses are externally applied and the prestressing technique is concerned with the means of applying and maintaining them, for they have to remain in being, and active, during the whole life of the structure. They may be imposed by such simple mechanical means as jacks or screws, or simpler still, by Freyssinet's famous flat jack which is shown in Fig. 1. This ingenious device is merely two thin mild steel plates which can be separated by introducing oil or water under pressure between them. The total force exerted is the area of the plate multiplied by the hydrostatic pressure employed. By this means, a small hand-operated pump can, in a few minutes, exert a force of 2,000 tons on a selected part of the structure. These jacks have been used for prestressing long concrete tunnels, for releasing the formwork under arch bridges, for adjusting the pressure on counterforts of large dams and for correcting thermal and shrinkage movement in bridges. They also provide a ready means of measuring the actual force exerted by the structure at the points where they are used.

However, the most common and almost universal means of applying the required external force is through the agency of high tensile steel, generally in the form of wires, cables or rods. There are two main ways in which the steel can be used to impose on the concrete the desired permanent compressive stress. In the system known as *pre-tensioning*, the wires are stretched the required amount to induce in them a very high tension; the concrete is then cast round them and after it has hardened the tension is released. The bond between the concrete and the wires is strong enough to prevent slip and so to

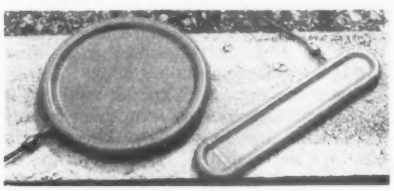


Fig. 1: Freyssinet flat jacks

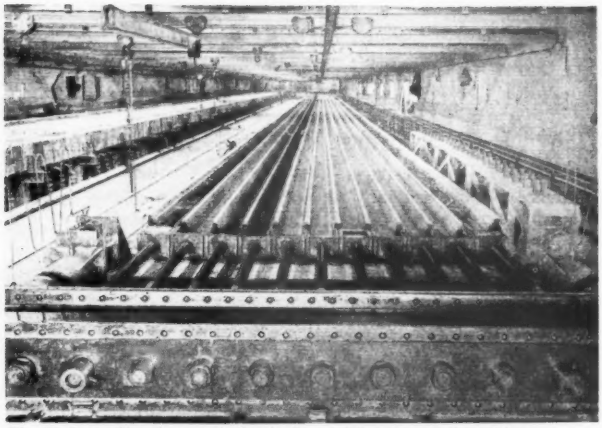


Fig. 2: Long-line factory in Paris for making pre-tensioned beams

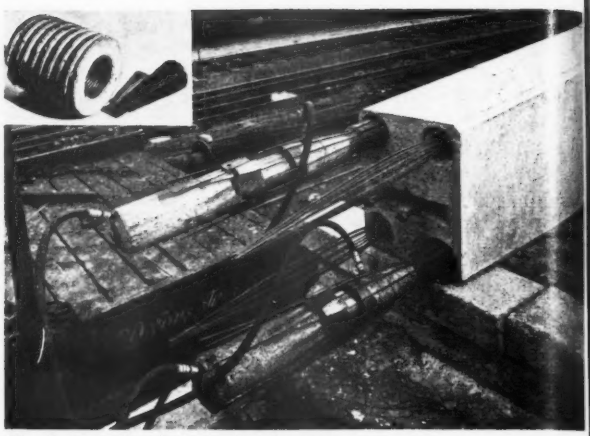


Fig. 3: Freyssinet jacks and anchorages

hold the wires permanently tensioned. The tensile force must, of course, be balanced by a corresponding compressive force in the concrete. This is the prestress. To those who feel that at some future date the wires would start to slip, the reply can be made that there are several special factors ensuring good bond. One is the small diameter of the wires; another is the shrinkage of the concrete surrounding the wires, and a third is the radial expansion of the wires when the pre-tension is released. Moreover, large prestressed structures have now been giving satisfactory service for close on 20 years. Pre-tensioning is mainly used for the smaller factory-made components, such as joists, slabs, beams and piles.

In the other system known as *post-tensioning*, the concrete structure or member is first cast and hardened, holes being left in positions where cables will be placed. When the concrete is strong enough, the cables are then fed through these holes, anchored at one end of the concrete and then stretched and anchored at the other end, the concrete itself providing the reaction for the stretching force. In very long structures such as bridges, the stretching may be done from both ends simultaneously; as soon as the cables have been anchored, the structure is ready for use. Usually the cable duct is grouted and the anchorages are concreted in. Post-tensioning is used for all large components and structures.

In pre-tensioning no proprietary system is used, although the method is sometimes referred to as the Hoyer system because Hoyer, in Germany before the war, was the first to make important commercial use of this method. A large factory which he put down in Paris for making prestressed components during the Occupation is illustrated in Fig. 2. Here production lines 330 ft. long were used.

There are three well-known methods of post-tensioning available in this country. They are the Freyssinet, Magnel and Lee-McCall systems. Each depends on special equipment for doing the tensioning and anchoring. In the Freyssinet system the cables are usually made up of twelve wires which are tensioned by a special jack and anchored into heavily reinforced concrete cones by means of a concrete plug (see Fig. 3). In the Magnel system the cables are made up of any suitable number of wires but these are tensioned two at a time with a light jack and anchored with steel wedges into steel plates (see Fig. 4). In the Lee-McCall system high tensile bars are used instead of cables and these have positive anchorages at each end in the form of special nuts and threads (see Fig. 5).

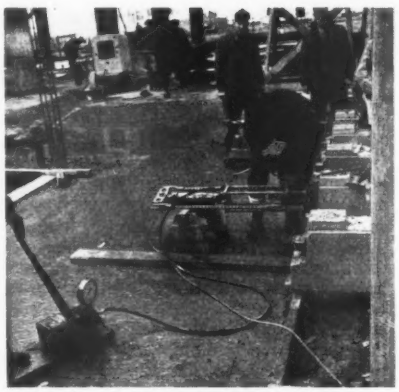


Fig. 4: Magnel jack and anchorage

Freyssinet's flat jack, which has been referred to earlier, is another piece of prestressing equipment, the simplest of all, which requires no cables and no anchorages. One other continental system should be mentioned which has been developed and used considerably in Germany for bridge work by Leonhardt. This is also a post-tensioning system in which the jacks which do the tensioning are made of reinforced concrete and are left permanently in the structure. They are arranged at one end of the bridge in the form of concrete blocks round which the cables pass before returning to the other end of the structure. One of these blocks showing the concrete rams is shown in Fig. 6. The steel coils standing on top of the block illustrate the reinforcement used to resist the hydrostatic pressure of the ram chambers inside the block. When this pressure is applied, the rams themselves press against the ends of the main girders of the bridge, which have been cast and hardened, but these are not seen in the illustration. Fig. 7 shows an American method of post-tensioning circular reservoirs and pipes, now also available in this country

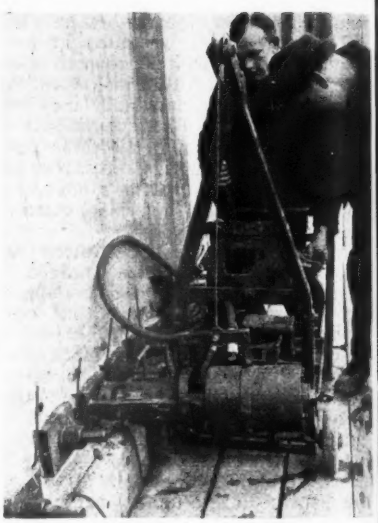


Fig. 5: Lee-McCall jack and anchorage

The wire normally employed for tensioning is 0·2 in. in diameter or less for pre-tensioning systems and has an ultimate strength of 100 tons per sq. in. and upwards. For post-tensioned cables it is usual to use wire of 0·2 in. or 0·276 in. diameter with ultimate strength around 100 tons. The bars in the Lee-McCall system have an ultimate strength of 70 tons per sq. in. For pre-tensioning systems the smaller the diameter the better the bond. Diameters as large as 0·2 in. are used, but in this case they are often indented or specially treated to improve the bond.

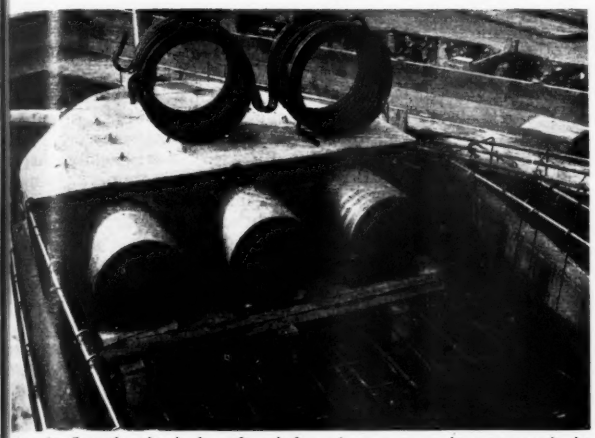


Fig. 6: Leonhardt jack of reinforced concrete incorporated in structure

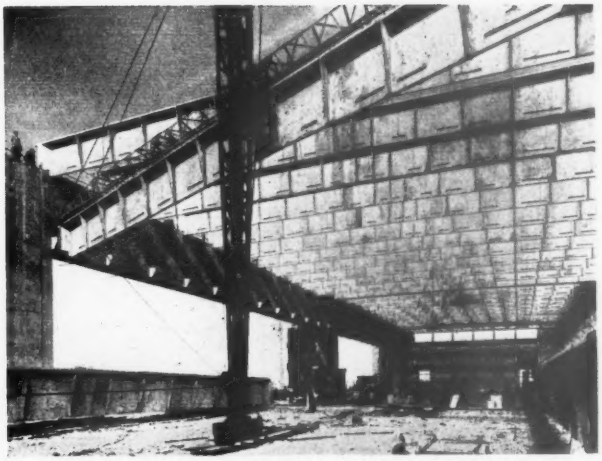


Fig. 8: 110 ft. prestressed roof beams in hangars at London Airport

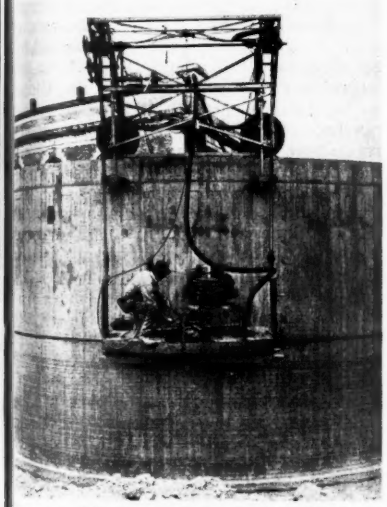


Fig. 7: Merry-go-round post-tensioning a circular reservoir *Photo: Preload (Gt. Britain), Ltd.*

**Materials.** The special high tensile steels have been mentioned and arrangements have been made between the Government and the manufacturers which are ensuring satisfactory supplies. The wire is of the same kind as is used in pianos, Admiralty cables, crane bonds and the like, so no new process is involved in the manufacture. In prestressed designs the steel is usually worked at a little more than half its ultimate strength. To obtain the best results it is essential to have a high-quality concrete to match the high-quality steel. Working stresses are usually taken at about 2,000 to 2,500 lb. per sq. in., or about double what is normally used for reinforced concrete. Here again, no new process is involved, the higher strength being obtained by reducing the water content of the mix to the appropriate figure and ensuring that the vibration is adequate to obtain full compaction of the concrete in the moulds. In practice, cube strengths for prestressed work at one month old are seldom less than 6,000 and often range up to 10,000 lb. per sq. in. or more.

**Advantages.** It has already been said that prestressing enables the concrete engineer to use his materials more economically, and this gives substantial savings in both steel and concrete. It also makes possible shallower beams and larger spans and these are two advantages which have already been very largely exploited in bridges and buildings. In beam and girder work it is roughly true to say that, compared with reinforced concrete, maximum economic spans can now be doubled. The prestressing gives the material special characteristics quite distinct from those of reinforced concrete. In practice, this is best exemplified by the resilience or springiness of a prestressed member like a plank, which can be flexed in much the same way as a timber plank. This is due to the stressing force which is always present and which closes cracks formed by overloading as soon as the overload is removed and so restores the deflection. This characteristic has great value for precast units which can be handled—and indeed mishandled—with much more safety than reinforced concrete units and which require no special handling steel to be incorporated. The absence of tension in prestressed structures also makes them particularly suitable for containing liquids, and they are in fact much used for reservoirs, water towers and large diameter pipes. Tests have shown the material to have an excellent fatigue strength, which has been borne out in practice by its successful use in railway sleepers and transmission line poles.

One particular advantage which is likely to be much more exploited is the possibility of making prestressed components and even whole structures out of short precast sections of concrete. These sections have holes cast in them through which the cables run, and when they are assembled in line the cable tension holds them together and makes them act as a single unit, which will support heavy loads and high shear forces. This method of prestressing enables large structures to be assembled at one point, the components of which have been manufactured at another but, being reasonably small, are easily transported to the assembly point. This is the method which has been largely employed by Freyssinet, for instance in numerous bridges which he has built over the Marne. It enables the concrete of the structure to be manufactured under factory conditions, thus ensuring high strength and consistent quality; and it permits the work to go on in winter weather. The 110 ft. long secondary roof beams at Heathrow Airport illustrated in Fig. 8 were made in this way.

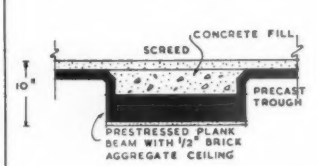
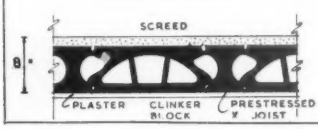
It is rather interesting to note that in the reverse sense, the advantage of being able to stress very long components is also exploited in concrete road slabs where a 600 ft. length may be cast without a joint and may be expected not to crack. It is likely that this will be proved an important application of prestressing since it appears to solve the problem of joints in road slabs at a cost comparable with present methods.

**Sound Resistance of Prestressed Concrete.** Prestressed floors can be treated in the same way as reinforced concrete floors where improved sound resistance is required. Simple methods of arranging floating floors and false ceilings are detailed in Building Research Station Digest No. 19, and these apply equally well in the case of prestressed floors. The methods are in use at the present time in a number of Gregory flats in various parts of the country and tests of the acoustic resistance have been made in one block at Croydon to measure the actual airborne and impact insulation achieved. Abbreviated results are given in Table A, from which it will be seen that when two different types of floating finish, one of wood and one of concrete and plastic tile, were used, both constructions give single figure values of airborne insulation rather higher between bed-

**Table A** Acoustic Tests on Prestressed Floors

| Source Room | Receiving Room | Description | Airborne Insulation | | Impact Insulation | |
|---|---|---|---|---|---|---|
| | | | Measured | Recommended | Measured | Recommended |
| Living room 33, Stowell Ave. | Living room 31, Stowell Ave. | Prestressed concrete joist and slab floor with floating wood raft finish | 52db | 55db | 15·5db | 15db |
| Bedroom No. 1 33, Stowell Ave. | Bedroom No. 1 31, Stowell Ave. | ditto | 48db | 45db | 12·5db | 15db |
| Living room 27, Stowell Ave. | Living room 29, Stowell Ave. | Prestressed concrete joist and hollow block floor with floating screed and Marley tile finish | 48db | 55db | 4db | 15db |
| Bedroom No. 1 27, Stowell Ave. | Bedroom No. 1 29, Stowell Ave | ditto | 49db | 45db | 4db | 15db |

**Table B** Fire Tests on Prestressed Floors

| | *Test Loading* lb. per sq. ft. | *Description* | *Duration of Test* hrs. | mins. |
|---|---|---|---|---|
| | 30 | Prestressed joists and clinker blocks | 2 | 9 |
| | 60 | Prestressed joists with brick concrete infill | 1 | 18 |
| | 142 | Prestressed clay planks. Clay blocks and concrete fill | 1 | 48 |
| | 97 | Prestressed hollow beams | 1 | 28 |
|  | 150 | Prestressed plank beam supporting precast troughs | 1 | 17 |
|  | 120 | Prestressed joists and clinker blocks | 2 (Not failed: test stopped) | 0 |

All tests made at Fire Research Station, Elstree, to B.S. 476

rooms than the recommended figure of 45 decibels and rather lower between living-rooms than the recommended figure of 55 decibels. The impact insulation passed the recommended figure of 15 decibels where it was correctly carried out but was ineffective in the case where the floating screed was incorrectly allowed to make hard contact with the walls.

**Fire Resistance of Prestressed Concrete.** Many people who take for granted that reinforced concrete offers adequate fire resistance feel doubtful regarding pre-stressed concrete and suspect that the higher stresses used may tend to cause early disintegration. The fire resistance of pre-stressed concrete is the subject of a comprehensive study now being undertaken by the Joint Fire Research Organisation at Elstree and the Building Research Station. Results of the main research programme are not yet published, but some information will be made available in the very near future and will be reassuring. A number of post-tensioned beams scaled down to one-quarter, three-eighths and one-half full size in order to accommodate them within the test furnace have now been through the standard test laid down in B.S. 476 and have behaved satisfactorily. Virtually no spalling or disintegration has occurred with unprotected beams although, oddly enough, there was a little spalling in the case of some which had protection applied to their faces. Results of these scaled trials are being compared with trials of full-sized beams in a larger furnace in America. Present indications are that the amount of cover to, and the temperatures reached by, the wires or cables is important. When the temperature reaches 400° C the steel loses a substantial part of its strength, but normal covers in beams delay this occurrence sufficiently to give resistances of two hours or more. The position in regard to pre-tensioned floors has been considerably clarified by *ad hoc* tests on a number of constructions which are available in this country. Results are briefly summarised in Table B extracted from a paper by L. A. Ashton in *Civil Engineering and Public Works Review* for December 1951, where it will be seen that all the constructions except one would be suitable from the fire resistance point of view for use in flats, offices, schools, hospitals, etc. It will be noted that the two which gave the best performance both had hollow clinker blocks for the infilling between the joists, although one was only tested with a 30 lb. superload for use in domestic floors.

There has been some concern expressed because in the first of these tests, in which very small prestressed joists with board and plasterboard finishes but no infilling were used, the joists broke up with explosive violence soon after the plasterboard ceiling had come away. The construction did, in fact, give a resistance about equal to the normal wood floor used in houses and has since been tested with ½ in. plasterboard and a skim coat for the ceiling and has passed the grade for house floors; but the phrase 'explosive violence' has been picked upon and has caused real apprehension. In fact, this is a phrase which occurs in the reports of the majority of fire tests on reinforced concrete and hollow tile floor constructions, not only where flint aggregates have been used but also with limestone and whinstone aggregates. Summarised results of many years' testing of reinforced concrete floors and beams at the Fire Research Station will be published in the very near future, and it will then be seen that the prestressed floors for the

range tested compare quite favourably with reinforced floors, often giving smaller deflections than hollow tile floors and not suffering so much from spalling and falling away of the cover in reinforced concrete and of the tile soffits in hollow tile floors; except for the one case quoted where very small joists with webs only 1 in. thick were subjected to the fire over almost the whole of their surfaces. Under similar conditions, reinforced concrete joists would not be expected to fare better.

While, therefore, the question of fire resistance of prestressed concrete is still *sub judice*, results of a comprehensive test programme should not give cause for apprehension.

### Costs

It is already clear that prestressed concrete is having little difficulty in holding its own on costs. For many years now numerous continental structures, and bridges in particular, have been prestressed where tenders were in open competition with both reinforced concrete and steel. In this country the picture is much the same. The case of prestressed roads has already been mentioned and Crawley New Town is an instance where, after an experimental slab had been put down, the prestressed tender for subsequent work was lower than tenders for the alternative design in reinforced concrete.

The large quantities of prestressed floors that are being used to-day in flats is evidence that costs are competitive even though in some cases the prestressed suppliers obtained a footing while the shortage of mild steel was at its worst. This view is confirmed by tenders for multistorey flats recently submitted to the L.C.C. by the principal flooring firms. The areas concerned are substantial and all tenders were made on identical inquiries. The average prices of firms tendering for prestressed floors came out at the same figure as the average of the hollow tile firms and about 8 to 10 per cent. cheaper than that of the precast concrete firms.

It is less easy to compare the cost for general buildings where, up to the present, prestressing is only being applied to part of the structure; but the hangar buildings of the British European Airways at Heathrow, which are illustrated in Fig. 9, are an example of a structure covering nearly ten acres in which nearly all the roof framing and a considerable part of the roof slab is prestressed, and for this building alternative designs in steel and in reinforced concrete were considered before the prestressed scheme was chosen. The Bournemouth bus garage illustrated in Fig. 10 has prestressed shell roofs of 150 ft. span, and the engineers considered that the prestressing of the concrete had secured a saving of 20 per cent. in the cost of this building.

It may be said that if at this early stage of development of the technique in this country such cases can be cited there is little doubt that this material will be regarded as highly competitive in the near future.

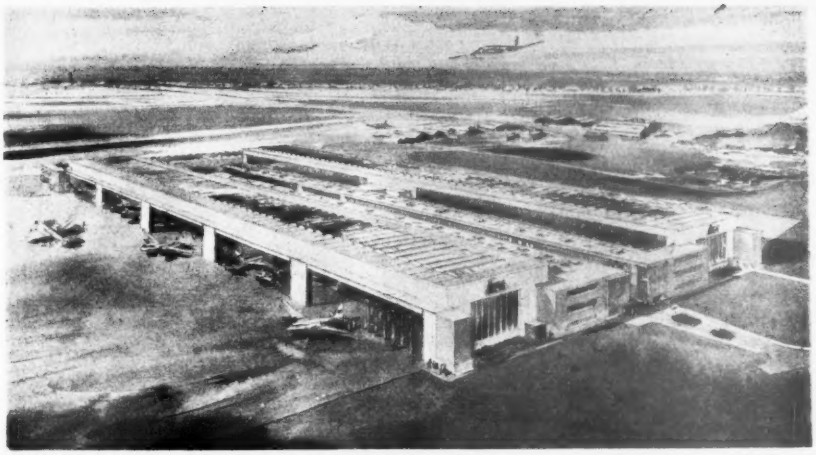


Fig. 9: General view of hangar buildings, London Airport *Photo: Institution of Civil Engineers*

**Conclusion.** This technique has come to stay. It will stay in its own right by reason of the valuable benefits derived from it at reasonable cost. It is, comparatively speaking, in its infancy, but it is clear that there is a tremendous field for development in front of it. It is not a substitute for reinforced concrete but rather a development of it, better fitted than reinforced concrete for building elements subjected to tension or bending.

To the architect, it will be more useful when the means of dealing with continuous constructions, such as monolithic building frames, is more fully worked out and practised: this is the subject of much thought and development at the present moment. Already it has been used in many large and important structures throughout the world, but space prevents the inclusion of more than two or three illustrations in this paper, and those taken only from this country. Some have been of such magnitude and of such pleasing appearance that it is with great reluctance that they have been omitted.

## DISCUSSION

**Mr. E. D. Mills** [*F*]: Mr. Masterman has given us this evening a great deal of valuable information in a short space of time in connection with the new structural technique of pre-stressed concrete. For my own part, I am grateful to the lecturer because he has confined himself to matters of interest to the architect and has not been tempted to stray into fields of higher engineering technologies where few architects—myself in particular—would dare to attempt to follow him. He has been clear and concise and he has provided reference material that will be very helpful on many future occasions.

I was particularly interested to hear that to date there are actually in this country 270 pre-stressed concrete structures. This is very encouraging for a comparatively new structural technique. Mr. Masterman's paper will undoubtedly help architects like myself who try to convince clients that pre-stressed concrete is not an untried technique and that we are not trying to use their buildings as guinea-pigs. Only last year I endeavoured to persuade a client to agree to the use of pre-stressed concrete for a large structure. In spite of the fact that a favourable saving in steel was shown and a smaller saving in cost, the client informed me that his company did not wish to be experimented on and preferred to leave these new-fangled ideas (I use their own terms) to others who wished to take a chance with them. Should such cases arise in future, the material provided by Mr. Masterman will be very valuable ammunition.

Of the many points of interest in the paper, I should like to refer to two. The first is that pre-stressed concrete can compete in cost with the more traditional structural techniques. It has been my painful experience—and I imagine the experience of others—that in the early days of any new structural material or construction method circumstances appear to combine to make the newcomer considerably higher in initial cost than the more traditional equivalent. It is therefore most satisfactory to learn that in this case we can not only enjoy the inherent advantages of the new technique but also produce economies in cost as compared with more normal construction.

Secondly, there have been a number of wild and alarming statements to which the lecturer has referred, mainly in the non-technical press, concerning the fire resistance of pre-stressed concrete. While these statements generally appear to have originated in uninformed sources or to have been inaccurately reported, the lecturer's remarks tonight will do a great deal of good in allaying some of the fears which have been publicly expressed. The fire research report will most certainly be of great value and will be awaited with interest.

Finally, I hope that the part played by the Ministry of Works in the development of pre-stressed concrete will not be overlooked. Most people consider the Ministry merely as an office which issues—or more

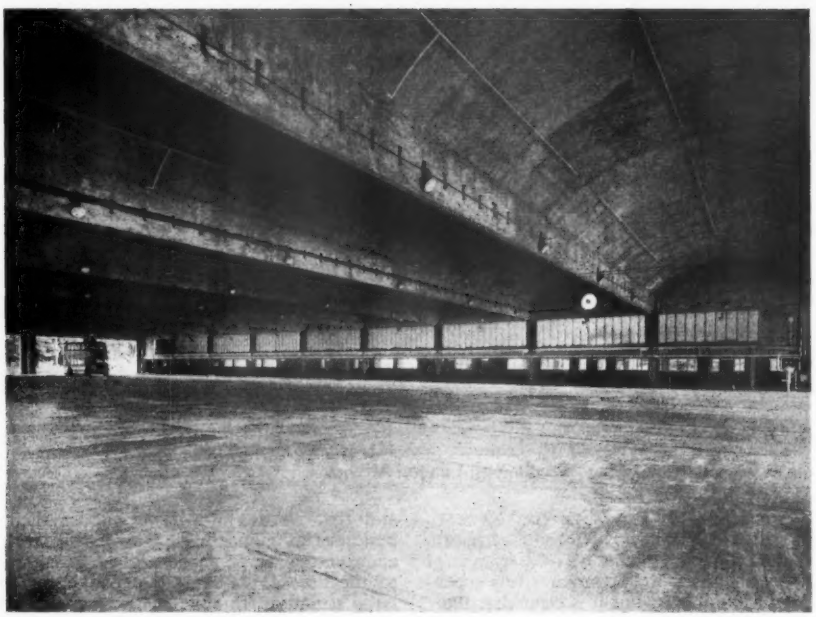


Fig. 10: Bournemouth bus garage with 150 ft. span prestressed shell roofs. Architects: Jackson and Greenen [*A*/*A*] Engineers: Travers Morgan and Partners

often fails to issue—building licences we so badly need. However, the Ministry has in fact done a great deal to encourage the use of pre-stressed concrete, and it is a step in the right direction that instead of recommending methods of construction, economies and techniques that we sometimes feel lead to unsatisfactory buildings, in this case the Ministry has adopted a more positive attitude and given support to the development of a technique which not only gives economy in steel but will in fact produce better buildings and ultimately, I hope, give us better architecture.

**Mr. F. J. Samuely, A.M.I.C.E.:** I had the privilege of reading Mr. Masterman's lecture in full, and I would recommend everybody else to do so. It gives a very valuable and concise explanation of what can be done with pre-stressed concrete. While Mr. Masterman was obviously forced by the relatively short time to summarise his paper, he has given us, in a way that everyone can understand without any mathematical knowledge, an account of how pre-stressed concrete really works.

I should like to refer to two points. First, I want to challenge Mr. Masterman's figure for the number of pre-stressed concrete structures in this country. It is much larger than 270, for the simple reason that machinery does not exist to record these jobs. There are, for instance, at least six jobs of mine that have gone up recently and that could not possibly be known to Mr. Masterman. I do not think it would be wrong to say that the figure is nearer 400 than 270.

Secondly, there is the question of economy. I wonder whether Mr. Masterman could say a few words in this connection and perhaps confirm what I am about to say. First of all, there is a definite region of spans in which the pre-tension method is economical and another in which the post-tension method is economical. Usually up to 30 or 35 ft. the pre-tension method (the method usually carried out in the factory in pre-cast concrete) is more economical than the post-tension method. This is important, because after all it is a question of design from the beginning whether one goes for pre-cast or in situ concrete. It is necessary that there should be a certain amount of repetition for small spans because otherwise pre-cast concrete is too expensive. In general, provided these spans are pre-tensioned, pre-cast concrete can be used for relatively small spans. When it comes to longer spans—spans over 35 or 40 ft. —there are two difficulties. First, it is difficult to transport them, and that makes pre-cast concrete less economical. Secondly, post-tensioned concrete is cheaper because it is the anchorage that costs money in almost all the post-tensioning systems, and the same amount of anchorage is necessary for 100 ft. or 10 ft. beams. For long spans then, the post-tension method is preferable, but for short spans the pre-cast method is more useful; that is, units 'on a string'. One can then make a very long beam of short pre-cast units.

I have thought personally that there is often a certain difficulty with small spans in making them economical. One usually can make them economical only if one uses a kind of composite method, by pre-stressing only the lower part that is in tension and doing the remainder in situ. In situ concrete is usually cheaper than pre-stressed concrete.

Coming back to economy again, I have a few figures which seem to show that the larger the span the more economical the pre-stressed concrete as compared with the pre-cast concrete. This is not absolute, of course. There does not seem to be any doubt that for large spans pre-stressed concrete is more economical. For spans of about 24 ft.—that is, shall we say, the normal size with which we have to deal—I find that the costs of the construction itself are almost equal and, with the short spans of say 12 ft., pre-stressed concrete seems to be slightly more expensive than ordinary reinforced concrete. But in every case there is an indirect saving on pre-stressed concrete and I should like to stress this point, because it can often be very remarkable. As Mr. Masterman said, pre-stressed concrete requires less construction depth than ordinary reinforced concrete—often two-thirds and sometimes even half. It is not merely a matter of so much head-room. It is often possible, for instance, to use ordinary floor slabs and pre-stress them, where before it was necessary to use slabs and projecting beams and—where the full ceiling height was required—to increase the storey height accordingly. Taking the ceiling height into account, pre-stressed concrete is cheaper on short spans.

There is another point. If we have, shall we say, a span of 30 ft. which we can do with 9 in. thickness in pre-stressed concrete where I should have said ordinary reinforced concrete would want 16 or 18 in. you save 9 in. If you have a multi-storey building, you save so many times 9 in. that you can possibly get another floor into the permitted height of the building. This is a point that should definitely be taken into consideration. In an investigation I made a few days ago on a floor slab 12 ft. 6 in. long, I found the remarkable fact that pre-stressed concrete was 5 per cent more expensive, but there was a difference of 3 in. in floor depths, and this made up for the extra expense. On wall materials and outside finishes this difference can easily be saved again.

There is the further point that pre-stressed concrete today saves steel, apart from actual money. This is very important, but it may not be in a few years' time. I should like to emphasise that in many cases there is a saving of 80 per cent of steel with pre-stressed concrete, and that is due to the fact that we can use high tensile steel, which is not suitable for ordinary reinforced concrete, so we get the maximum steel saving by using pre-stressed concrete in the proper way.

**Mr. Masterman:** I want to thank you very sincerely for a very pleasant and comprehensive vote of thanks. As soon as one sits down after reading a paper of this kind, one remembers all the things one had forgotten, and the proposer and seconder have already reminded me of several points.

Let me first of all come clean about the number of jobs. I did not go round and count them, of course. I obtained my figures from the Cement and Concrete Association. I am more than willing to agree with Mr. Samuely. No doubt the figure of 270 is a typical example of British understatement. There are probably a lot

more pre-stressed concrete structures in this country.

On the question of economy and the lengths best suited to the different systems, I cannot disagree with Mr. Samuely. I think his figure is about right. If you have to pick on a figure, 30 ft. is about the dividing line. Below that figure it is generally best to use the bonded system—the pre-tensioned factory-made unit with small wires. Above that post-tensioning is best. The figure moves about a bit—perhaps between 25 and 35 ft., according to circumstances.

I cannot say much about Mr. Samuely's composite construction. He is a great advocate of it, and we are all watching it with very great interest. He is probably more experienced in it than any of us. But it is, of course, fair to say that the in situ concrete which you pour in on the job is much cheaper than the pre-stressed component which has probably had to be brought to the job and has had special work done on it.

I am very grateful to him for mentioning the saving in steel. I was rather proud that I could give you—I hope—some quite convincing advantages of this technique without mentioning the saving in steel. A few years ago we always did that. It is a very remarkable saving: it is normally 80 per cent and sometimes as much as 90 per cent compared with the weight of steel used for a corresponding reinforced concrete element. But of course all that saving is not in money, because the special high tensile wire costs two-and-a-half times as much as mild steel, so some of the gain is lost. It is, however, very important, because steel has become one of our scarce and costly materials, and it is worth saving for other reasons.

**Mr. J. B. S. Comper** [*F*]: I should like to ask a deplorably ignorant question. Is there any difference in thermal expansion as between pre-stressed and ordinary reinforced concrete?

**Mr. Masterman:** Quite simply, no. The same coefficient would apply in both cases.

**Mr. K. D. Burbidge** [*A*]: Are there any complications as regards patents in this country?

**Mr. Masterman:** That is a very vexed question. There are hundreds of patents now. Freyssinet's original ones are all out of date, but the people who are using this technique continue to patent new ideas as fast as they can in order to keep their systems alive or to keep them to themselves, so you undoubtedly have to be careful about patents. I am sorry I cannot simplify the answer to this question. The position is made particularly difficult because there is such congestion in the Patent Office at present that you cannot even know sometimes for two years anything about the provisional applications that have been made.

**Mr. R. Milstone** [*A*]: Could Mr. Masterman give us some information about the system of connecting pre-stressed units which are made in the factory—connecting beams to columns, and so on? I understand there is a particular method by which they are bolted together. I would like to know whether Mr. Masterman does not think this method would develop extremely high local stresses, probably of a higher order than those on which the material is designed.

Secondly, Mr. Masterman referred to the resilience of units and said they could be overloaded and when the overloading was removed would return to their normal shape. I take it that this means that the overloading is not of such a nature as to stress the steel so much that its character changes. I should like him to indicate the sort of margin this involves, since obviously if the margin is a very wide one it means, in the first place, that the design is not as economical as it might be if it were a narrow one, and we might not be able to take advantage of it.

**Mr. Masterman:** I cannot think of any case where such pre-stressed sections are bolted together, and I cannot think that they would be economical if they were. I do not think such a connecting method is necessary.

With regard to resilience, it is remarkable that when you load and overload the beam you add very little to the steel stress. It is one of its peculiar characteristics. The steel stress is very high when it is originally put into the member. It is probably never higher again in the rest of its life. In fact, you get certain losses due to creep and shrinkage in the materials after a time so the stress falls somewhat. To put the load on does not raise the steel stress more than 3 or 4 per cent as a rule, so that even a 50 per cent overload adds very little to the steel stress.

**Mr. R. G. Hollis** [*A*]: Could Mr. Masterman give us some rough guide to the amount of camber required and when it is most appropriate to apply it?

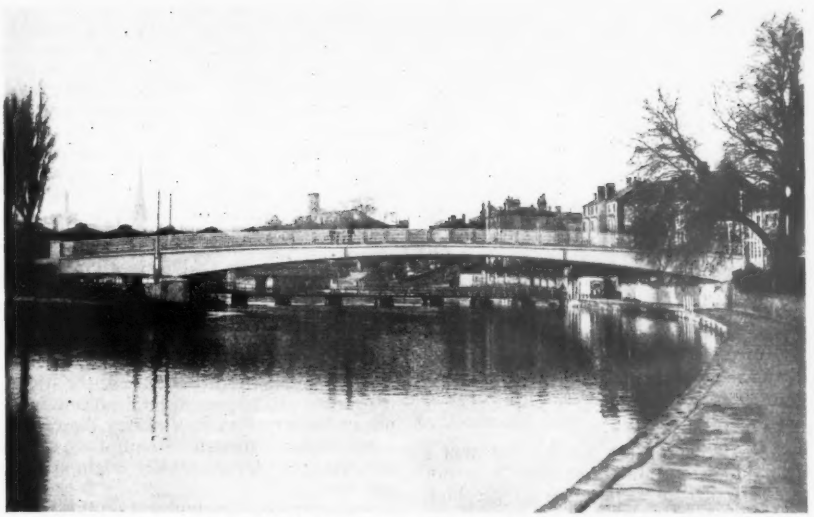


Fig. 11: Castle bridge, Shrewsbury, 150 ft. clear span. Architects: T. P. Bennett and Son [*F/A*] Borough Engineer: F. R. Dinnis

**Mr. Masterman:** It is a little difficult to answer this question. I would say that no camber is deliberately put into the structure. What the engineer does in the simplest case is to arrange that when he tensions, and long before any loads are put on, there is no compressive stress in the top at all but just zero stress. You have all the strength of the concrete at the top, waiting there available to carry the loads. The camber comes automatically when you drop the point of application of the tension. The lower you go down the more you tend to get upward camber, but you do not put that camber in deliberately. You design so that your tensile stresses will all be neutralised and are not going to give any tension or cracking in your member when it is fully loaded.

**Mr. G. J. Woolnough** [*Student*]: After you have pre-stressed concrete slabs for a road, for example, what prevents them from buckling? With this upward camber you are putting tremendous stress in the wire. Does not the slab buckle in the centre? If you can get these tremendous stresses in high tensile wire, why do you need to hook ordinary reinforced concrete bars to get the bond?

**Mr. Masterman:** We have here two very good questions. Buckling is interesting. There is no danger of this in a section, however thin it is, provided the cable is making contact with the concrete. The cable itself restrains the buckling. It has this high tension in it which runs along in actual contact with the concrete at every point. If you try to buckle it, it goes back again. There are no buckling problems at all. This is very useful. You can make extremely long columns if you want to.

I have dealt with hooks and bonding, but it is a fact that the bond with these thin wires in pre-stressed concrete is substantially better than the bond you get with mild steel rods. It is due to a number of

causes. One is that when you tension the wires they get a little thinner, and when you let go again to transfer the stress into the concrete they try to swell out to their original size. You thus have swelling of the wire. The concrete which is cast all round the wire during the hardening process shrinks round the wire. You have two forces, both tending to increase the bond, and they do so. In addition, you have the well-known fact that the smaller the diameter the larger the surface area, and so the bond tends to be good in any case with small wires, very substantially better than with rods.

**Mr. L. Hulbert:** In consequence of the high tension and high tensile strength of the steel wire can leaner concrete mix be employed, or in other words can a saving of cement be envisaged?

**Mr. Masterman:** I am not sure whether I have understood the question. It is not necessary to use rich mixes to get high strength concrete for pre-stressing. Quite a lot of work is done with mixes of 1 to 1½ to 3, which is commonly used for reinforced concrete, in which much lower stresses are being worked to.

**Mr. Hulbert:** I would like to ask for confirmation that one can indeed accept a leaner mix which will yield the same strength as is desirable.

**Mr. Masterman:** I think the answer is that the strength depends on the amount of the water. If the leaner mix contains the correct amount of water and can be satisfactorily compacted, it will give sufficient strength. You do not need a stronger mix so long as those conditions are fulfilled.

**Mr. D. S. Warren:** Could Mr. Masterman comment on the possible use of pre-stressed concrete in civil defence buildings? The types of building I have in mind are civil defence report or control centres which may be expected to have to stand considerable blast.

**Mr. Masterman:** I am sorry I cannot give you any really authoritative information at all. Work is going on but it is secret or semi-secret, and I have in fact no particulars of it. It is thought that pre-stressing is likely to contribute usefully but I cannot be more specific than that.

**Mr. T. Mitchell** [*A*]: Could we hear a little more about roads and the practical lengths and type of joint which should be used when joints have to occur? Is there any reason why there should not be similar advantages in using pre-stressed concrete for factory floors as well as roads?

Secondly, does the lecturer know of any snags arising from heating coils in floor slabs of buildings?

**Mr. Masterman:** The roads at Crawley have lengths of 600 ft. I think the practical limit at the moment is what one can conveniently make in cable length. I refer to what is convenient in putting in a cable. This development is in its infancy, and I did not think architects would be much interested in it. It seems to be a possible line of development. That also answers the point about joints. They would only be put at points where you had to finish the cables and anchor them. That might be at any rate several hundred feet.

I cannot recall a case where pre-stressed floors are being used with heating coils, but I do not see that there would be any difficulty or any trouble, providing the coils could be accommodated.

**The Chairman:** In that connection, I was going to ask what is the practical width for a road? You have told us about the length. The answer would apply to factory floors as well.

**Mr. Masterman:** I do not think the width matters at all. It does depend on how you put in the stressing. In Crawley the cables were arranged diagonally, but they could be arranged longitudinally right down the slab.

An interesting development on this point is another of Freyssinet's methods. He is an extremely resourceful man. He constructed a runway at Orly Airport, and we have one at Heathrow, an experimental length, which is, I think, 1600 to 1800 ft. long and a couple of hundred feet wide. In both cases he applied the tensions only one way. The whole slab was made of 6 in. thick pre-cast rectangular units with sides one yard long. They were laid down all over the area and jointed together, and the cables ran across in grooves which were provided between the slabs. They were anchored at one end, tensioned, and anchored at the other. On each end of the slab he put a stiff abutment by anchoring it down into the ground and he had little vertical rollers arranged down triangular runs so that the sections could move relative to one another when they were stressed. As he squeezed to tighten up the cables, the triangular sections tried to move together and they tended to lengthen the whole slab, but as the abutments were fixed it actually put a pre-stress in the slab. It is a most ingenious exploitation of the system. It bears on this question because one can deal with almost any width and length in practice.

**The Chairman:** It is obvious that we shall tire before Mr. Masterman. He has all the answers to our questions. Those of you who have had an experience of this sort know that Mr. Masterman has held his wicket extremely well on very technical questions. I should like to endorse your very sincere vote of thanks to him for his excellent paper.

# Review of Films

*The country of origin and date of release are given first. The film is in monochrome unless otherwise stated. The sizes* (35 *mm. and* 16 *mm.*) *are given. Sound films are marked* '*sd*', *and silent* '*si*'. *The running time is given in minutes.*

(*F*) *indicates free distribution.*
(*H*) *indicates that a hiring fee is payable.*

**Bricks and Mortar**
Britain 1950 (H)

*Summary.* Types of brick, their manufacture and use. Mortar mixes. Manufacture, size, weight and use of commons, facings, engineering, purpose-made, insulating and fire bricks. The gauging of mortar, its preparation on small and large scales: method of describing the thickness of walls in terms of brick lengths.

*Appraisal.* A clearly presented elementary lesson which suffers a little from diffusion and over-simplification. The subject needs to be treated more fully and it might have been wiser to devote a separate film to the subject of mortar. The photography is good, but had it been possible to produce the film in colour, its value would have been enhanced. The commentary is interesting but needs amplifying. The ending is somewhat abrupt, leaving the feeling that the film is unfinished. A short sequence showing actual brick-laying might have been added.

16 sd., 35 sd. 10 min. Obtainable from Educational Foundation for Visual Aids, Film Library, Brooklands House, Heath Road, Weybridge, Surrey. Made by Topical Film Co. Ltd.

**Bonds**
Britain 1950 (H)

*Summary.* Different types of brick bonding and their uses. Why bonding is used, various types—stretcher bond, treatment at stopped ends and cross walls: Flemish bond, its construction in a one brick and one and a half brick wall: English and Dutch bond: English and Flemish garden wall bond.

*Appraisal.* Useful as a short introduction to the subject and as a sequel to the film on bricks and mortar. A brief introduction and summing up would have added to the value of the film. The photography and commentary are, on the whole, good but the latter needs amplification.

16 sd., 35 sd. 10 min. Obtainable from Educational Foundation for Visual Aids, Film Library, Brooklands House, Heath Road, Weybridge, Surrey. Made by Topical Film Co. Ltd.

**Bricks**
Britain 1950 (H)

*Summary.* The aim is to show in an elementary way how bricks are made. A short sequence at the end shows the bricklayer at work. Teaching notes available. Designed for age group 9–13.

*Appraisal.* A useful film provided supplementary information is available. In aiming at simplification certain processes are omitted and the jumps ahead may be somewhat confusing. Most of the photography is good, particularly the kiln sequences. A few introductory captions would have made for clarity.

16 si., 7 min. Obtainable from British Instructional Films Ltd., Film House, Wardour Street, W.1.

# R.I.B.A. Prizes and Studentships

AT A GENERAL MEETING on 6 January the Council's Deed of Award giving the results of the competitions for the Annual Prizes and Studentships awarded by the R.I.B.A. was read. There were in all 667 competitors. The awards are as follows:

**The R.I.B.A. Intermediate Design Prize: A Certificate and £100 for the Study of Contemporary Architecture in Europe.** The subject was 'A Railway Terminal in a Small Provincial Town'. Awarded to Mr. Maurice Edward Rutledge [*Student*], 18 Prince Georges Avenue, Raynes Park, London, S.W.20. (School of Architecture, The Polytechnic, Regent Street, London.)

**The Victory Scholarship: A Silver Medal and £120 for the Advancement of Architectural Education.** The subject was 'An Hotel for Car Ferry Passengers at Dover'. Not awarded. Certificates of Honourable Mention were awarded to Mr. Frank Hilton Brown [*Student*], 29c Pembridge Crescent, Notting Hill Gate, W.11 (School of Architecture, The Polytechnic, Regent Street, London), and to Mr. Ronald William Brunskill, B.A.Arch. (Manchester) [*A*], 1 Hornby Gardens, Prestwich Park South, Prestwich, Manchester (School of Architecture, University of Manchester).

**The R.I.B.A. Silver Medal for Measured Drawings and £75.** Awarded to Mr. Tadeusz Lesisz, School of Architecture, Cowley Place, The Plain, Oxford. (Oxford School of Architecture.)

**The R.I.B.A. Silver Medal and £50 for an Essay.** Not awarded. A Certificate of Honourable Mention was awarded to Mr. John Brandon-Jones, A.A.Dipl. [*A*], 2 Redington Road, London, N.W.3. (Architectural Association School of Architecture.)

**The Owen Jones Studentship: A Certificate and £100. For the Improvement and Cultivation of Knowledge of the Successful Application of Colour as a means of Architectural Expression.** Awarded to Mr. John Arthur Wells-Thorpe [*Student*], 21 Mayfield Crescent, Withdean, Brighton, 6. (Department of Architecture, Brighton College of Art and Crafts.)

**The Arthur Cates Prize: A Certificate and £80.** In the current year the prize was offered for a study of the contemporary development of Domes to take the form of a critical essay. Awarded to Mr. Gordon Graham, Dip.Arch. (Nottm.) [*A*], Bartlett, Graham & Gray, Castle Gate Chambers, Castle Gate, Nottingham. (School of Architecture, Nottingham College of Art.)

**The Banister Fletcher Silver Medal and £26 5s. 0d. for the Study of History of Architecture.** The subject was 'Farm Buildings of any County or District before 1837'. Awarded to Mr. Gerald Thomas West [*Student*], Warham Crest, 23 Warham Road, Croydon, Surrey. (Bartlett School of Architecture, University of London.) A Certificate of Honourable Mention was awarded to Mr. John Brian Weller, Longfield, Penn Road, Wolverhampton. (Birmingham School of Architecture.)

**The Alfred Bossom Research Fellowships £250: For Post-Graduate Research.** Awarded to Mr. Edward D. Mills [*F*], 16 Carlisle Street, Soho Square, London, W.1. (School of Architecture, The Polytechnic, Regent Street, London.)

**The Neale Bursary: A Certificate and £100 for the Measurement of Old Buildings.** Awarded to Mr. Robert Taylor Clough, Dip.Arch. (Leeds) [*A*], Lynleigh, Utley, Keighley, Yorks. (Leeds School of Architecture.)

**The Hunt Bursary: A Certificate and £75 for the Study of Housing and Town Planning.** Awarded to Mr. Edward Hyam Jamilly, Dip. Arch.(The Polytechnic) [*A*], 20 Chandos Road, London, N.W.2. (School of Architecture, The Polytechnic, Regent Street, London.)

**The Athens Bursary: £125 for Study at the British School at Athens.** Awarded to Mr. Ralph Cowan, A.M.T.P.I. [*A*], The School of Architecture, Edinburgh College of Art, Lauriston Place, Edinburgh, 3. (School of Architecture, Edinburgh College of Art.)

**The Rome Scholarship in Architecture, 1952.** £400 per annum for two or three years' study and research at the British School at Rome. Offered by the R.I.B.A. and awarded by the Faculty of Architecture of the British School at Rome. Awarded to Mr. Duncan Ian Black, D.A.(Edin.) [*A*], 11 Pentland Crescent, Edinburgh, 10. (School of Architecture, Edinburgh College of Art.)

**The Ashpitel Prize, 1952.** A Prize of books, value £20, awarded to the candidate who, taking the Final Examination to qualify as an Associate, shall most highly distinguish himself among the candidates in the Final Examination of the year. Name to be announced later.

**The R.I.B.A. Silver Medal and £10 in Books for Students of Schools of Architecture recognised for Exemption from the Final Examination.** Awarded to Mr. George Alexander MacNab [*Student*], 25 Angusfield Avenue, Aberdeen. (The School of Architecture, Robert Gordon's Technical College, Grays School of Art, Aberdeen.)

**The R.I.B.A. Bronze Medal and £10 in Books for Students of Schools of Architecture recognised for Exemption from the Intermediate Examination.** Awarded to Mr. Alexander Duncan Bell [*Student*], 40 Bell Street, Dundee. (School of Architecture, Dundee College of Art). Certificates of Honourable Mention were awarded to Mr. Thomas Hynd Duncan, 8 Baillie Street, Whitburn, W. Lothian, Scotland. (School of Architecture, Edinburgh College of Art), and to Mr. Kenneth George Arthur Feakes, 38 Fairview Avenue, Earley, Reading (Oxford School of Architecture).

**The Archibald Dawnay Scholarships, 1952. Three Scholarships of £60 each for the Advanced Study of Construction.** Scholarships awarded to Mr. Kenneth George Arthur Feakes, 38 Fairview Avenue, Earley, Reading. (Oxford School of Architecture); to Mr. Nigel Ralph Grimwade, Architectural Association, 34 Bedford Square, London, W.C.1 (Architectural Association School of Architecture); and to Mr. John Dixon Robertson, 13 Boglily Road, Kirkcaldy, Fife, Scotland (School of Architecture, Edinburgh College of Art).

**The R.I.B.A. Henry Jarvis Studentship at the School of Architecture, The Architectural Association, 1952: £50.** Awarded to Mr. Peter Matthews [*Student*], 12 Madeira Grove, Woodford Green, Essex.

**The R.I.B.A. Howard Colls Travelling Studentship at the Architectural Association, 1952: £15 15s. 0d.** Awarded to Mr. Keith Roy Darby, 77 Rosehill Road, Ipswich, Suffolk.

**The R.I.B.A. Donaldson Medal at the Bartlett School of Architecture, University of London, 1952.** Awarded to Mr. Christopher Wilberforce Arnold [*Student*], 12 Nassau Road, Barnes, London, S.W.13.

**The R.I.B.A. Anderson and Webb Scholarship at the School of Architecture, Cambridge University: A Certificate and £55: 1952.** Awarded to Mr. John Coverdale Newberry, School of Architecture, 1, 2 and 3 Scroope Terrace, Cambridge.

**The R.I.B.A. Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects (£10 in Books), 1952.** Not awarded.

**The R.I.B.A. Prizes for Public and Secondary Schools.** Total value £10 10*s.* 0*d.* Offered for an Essay of not more than 1,000 words or for sketches or scale drawings of a building or part of a building. For competition between boys and girls in Public and Secondary Schools. Awarded as follows: **(a) Essays.** (1) £2 2*s.* 0*d.* to David R. Bennetts of Manchester Grammar School, for his essay on Middleton Parish Church. (2) £2 2*s.* 0*d.* to Geoffrey Holland of Manchester Grammar School, for his essay on the Church of St. Peter, Prestbury, Cheshire. **(b) Sketches.** (1) £4 4*s.* 0*d.* to Ian McNab of Derby Grammar School, for his drawing of Wollaton Hall, Notts. (2) £2 2*s.* 0*d.* to John G. Rushman of Northampton Grammar School, for his drawings of Hardwick Church, Northants.

# All Saints' Church Darlaston, Staffs.

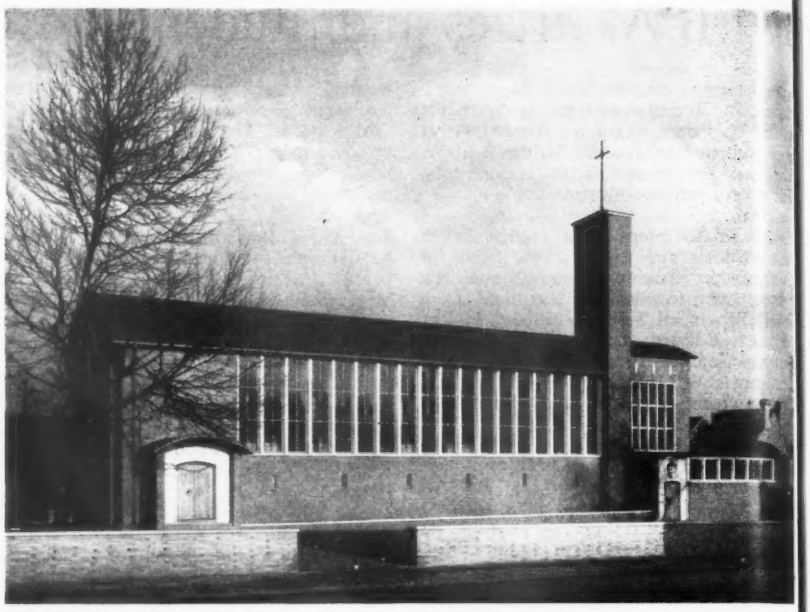
## Architects: Lavender, Twentyman and Percy. [*F/A*]

THIS NEW CHURCH takes the place of a Victorian building destroyed by a bomb in 1942. The site includes space for a hall of 200 seating capacity which it is proposed to build to the west of the church when circumstances permit. There is a fall across the site from south-west to north-east.

**The Plan.** The church is planned on traditional lines, in accordance with requirements, the choir being raised two steps above the floor of the nave and the sanctuary one step above the choir. A chapel with apsidal end adjoins the choir and sanctuary on the south, and on the north side there are two storeys; the upper one, at choir level, containing the clergy vestry, lavatory and staircase, and the lower storey the choir vestry, lavatory and store.

There is no east window, its place being taken by a curtain in a recess behind the altar, surmounted by a curved canopy. The fenestration in the nave is not the same on each side; in the south wall there are widely-separated small windows at low level, but from a height 9 ft. above the floor a range of windows 15 ft. high runs up to the eaves. Such a continuous strong southern illumination might cause some inconvenience to members of the congregation sitting towards the back of the nave, but this is avoided by the system of construction used, in which concrete piers project some 6 ft. inwards from the south wall and thus act as light shields. These piers are pierced in their lower parts to provide passage-way down the aisles and are therefore U-shaped at floor level.

This construction is repeated on the north side of the nave, but here there are no windows at low level; instead there is a range of narrow windows about 5 ft. high set well up the wall in pairs at intervals. The lighting to the sanctuary is on similar lines, but here the piers project only some 15 in. and the effect is to concentrate light on the altar without glare.



The south elevation

**Construction.** The main building is constructed with reinforced concrete frames and roof; the vestries and chapel have load-bearing brick walls and flat concrete roofs. The panel walls between the main frames are in brick cavity walling, the inner skin being 9 in. thick; they are supported on reinforced concrete beams spanning from frame to frame.

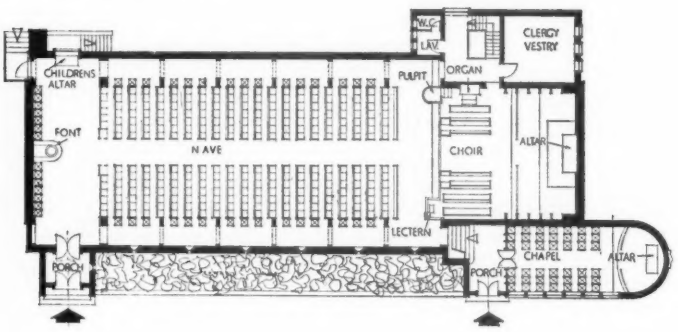
The U-shaped concrete frames are 9 in. thick set at 12 ft. centres, and they support the suspended floor of the nave, the edge-beams of the barrel roof, and the eaves beams. These frames rest on reinforced concrete piers taken down to 12 ft. below the level of the nave floor. On the site of the bomb crater mass concrete piers go down some 8 ft. to 15 ft. deeper. The supporting piers are placed 4 ft. inwards from the nave walls in order to reduce the bending moment on the frames, and reinforced concrete fins 4 ft. deep and 9 in. thick span laterally from pier to pier and carry the reinforced concrete floor slabs of the nave, which are finished in granwood, as is the choir.

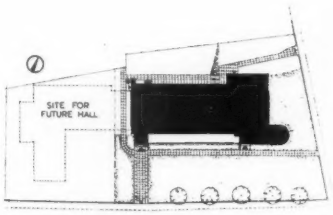
The barrel roof is 5 in. thick at the sides, tapering to 2½ in. at the crown; it is covered with vermiculite insulating screed varied in thickness to give concentric curves to the inside and outside of the roof. The final outside covering is copper. The flat roofs are finished with asphalt on woodwool slabs.

The tower is constructed with 12 in. thick concrete fins across the narrow ends; the fins are faced with brickwork which continues to form the connecting walling of the sides. Concrete corbels support the headstocks of the two bells, which are visible through openings in the tower.

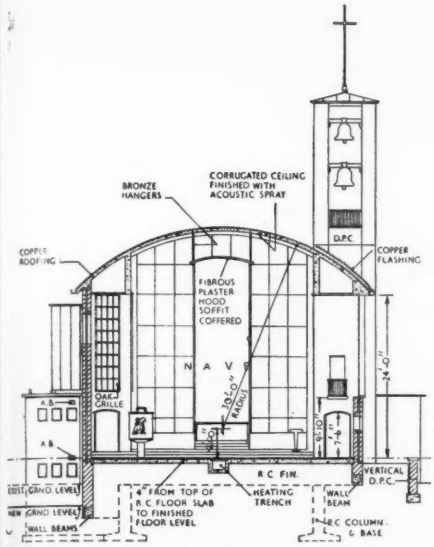
**Finishes.** The walls are faced on the outside with 2⅝ in. hand-made brown bricks; the mullions in the windows and the surrounds to the porch doors are in Portland stone fixed with bronze cramps. Gutters and downpipes are copper, and the windows are in aluminium painted pale grey.

Internally the walls of the nave have been rendered with a mix of pinky-grey self-coloured lime and stone dust, with a scraped finish. The east wall is faced with slabs of travertine; the west wall has a dado of reeded fibrous plaster, and above the dado it has been given an acoustic spray



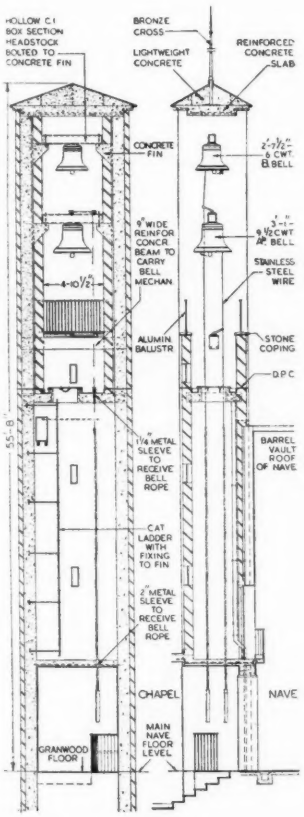




Above: the block plan
Left: the plan of the church

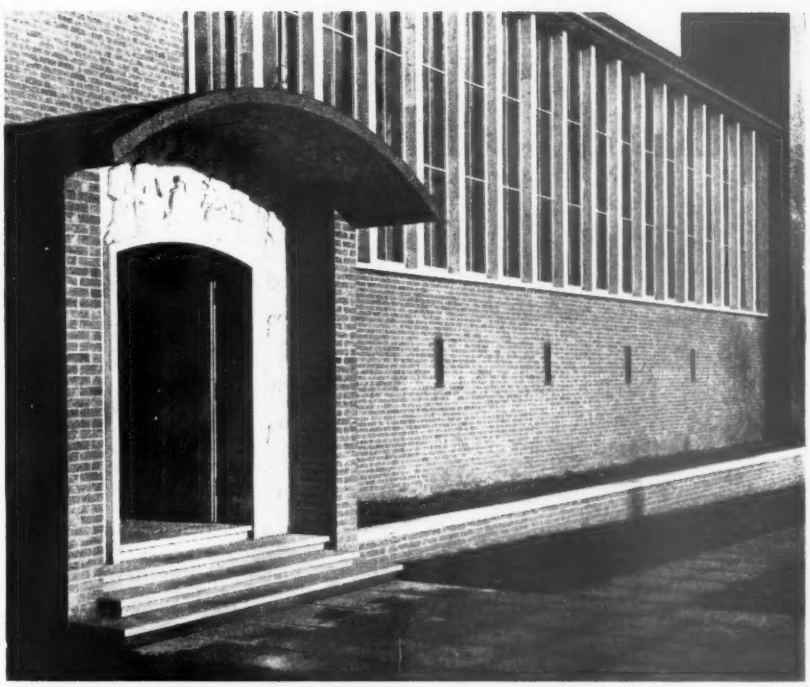



Cross section through the nave

View from the south-east




Sections through the tower

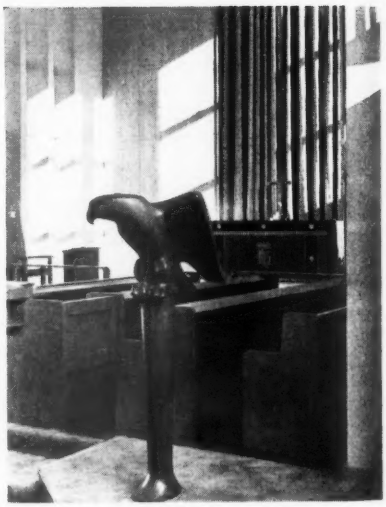


The main entrance and part of south elevation

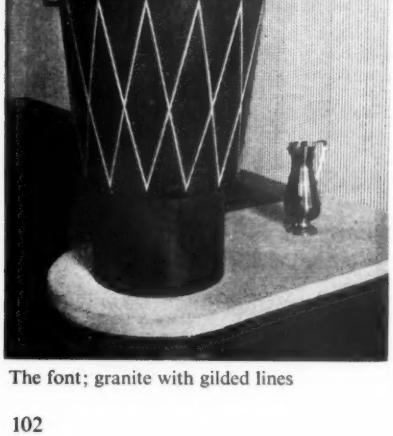
Above, left: the choir and sanctuary. The organ is placed behind the grilles on the left.

Above, right: general view of the nave and sanctuary, showing the U-shaped concrete frames forming aisle passage-ways

The chapel. The panelling incorporates existing memorials



The lectern and altar



The font; granite with gilded lines

The apsidal end of the chapel has also been faced with reeded fibrous plaster.

The concrete of the nave ceiling was cast on corrugated iron shuttering to give a reeded effect and acoustic material has been sprayed on the underside. The aisle ceilings are oak-faced plywood with V joints; the coffered sanctuary ceiling is in fibrous plaster painted pale blue-grey.

The pulpit is in reinforced concrete rendered to match the walls; it has an inserted carving executed in Ancaster stone; the base is faced with blue-green mosaic. The font is of black granite with incised and gilded lines, and it has a sycamore cover bearing a design of fishes incised with black lines.

Except in the vestries all joinery is executed in oak. The panelling in the chapel has been designed to incorporate existing lettered memorial panels.

The stone carving round the main entrance and in the panel on the pulpit are the work of Mr. Donald Potter, who also executed the oak lectern. Except for a few existing pieces all the furniture, such as the altars, pews and reading-desks, are in oak to the architects' designs.

Heating is by the invisible panel system of floor heating, served by low-pressure hot water from a gas-fired boiler, and the chapel has a tubular electric heating system for topping-up during the week.

**Cost.** Excluding the organ, pews and carpets, but including special foundations, site lay-out, bells, choir stalls and altars, the cost of the building was about £35,700, which works out at a cube rate of 3*s.* 6*d.* taking the height of the main building from 4 ft. below floor level.

The general contractors were Messrs. Fletchers (Builders) Ltd., of Kingswinford.

# Review of Construction and Materials

*This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.*

*The Director, The Building Research Station, Garston, near Watford, Herts.*
*Telephone: Garston 2246.*

*The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.*
*Telephone: Busby 1171.*

*The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.*
*Telephone: Princes Risborough 101.*

*The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1.*
*Telephone: Abbey 3333.*

*The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.*
*Telephone: Museum 5400 (10 lines).*

*The Director, The Scottish Building Centre, 425–7 Sauchiehall Street, Glasgow, C.2.*
*Telephone: Douglas 0372.*

**Fire Precautions in Small Halls**

The Fire Protection Association (84 Queen Street, E.C.4) have produced a useful booklet on fire precautions in small halls used for entertainment purposes. The booklet is not concerned with planning requirements in new buildings but solely with simple fire precautions in existing small halls used for occasional performances and having a seating capacity of not more than 200 persons: thus it covers a class of public assembly which is normally outside the range of the various licensing authorities but one in which disasters can easily occur. It should be chiefly of use to those responsible in schools, institutions and village halls for ensuring the safety of audiences and performers.

Advice such as is given in this booklet can all too easily be costly counsels of perfection. This pitfall is avoided, the authors of the booklet recognising that some halls are still lit by oil lamps or warmed by stoves and that cost is often an important item with a small community. The recommendations, in fact, are common sense, inexpensive and easily applied; they recognise that risks are usually taken in ignorance and not wantonly; they indicate what to avoid as well as what to do; they are not onerous nor impracticable. Indeed, the purist could easily find fault with the recommendations as not going far enough, not realising that a few simple safety rules may be obeyed whereas an elaborate code would almost certainly be disregarded.

**L.C.C. By-laws.** The London Building (Constructional) By-laws, 1952, have now been published; they are made in pursuance of the London Building Acts, 1930–39. To meet comments received by the L.C.C. during the drafting period an Explanatory Memorandum has been published in connection with (but not forming part of) the new By-laws, and among the matters included in the Memorandum are rights of appeal, pressure on ground, external pipes exceeding 6 in. internal diameter, and the structural use of reinforced concrete and timber.

Section 20 of the London Building Acts (Amendment) Act, 1939, dealt with buildings of excess height and/or additional cubic extent, and the principles approved by the L.C.C. for the guidance of its officers in dealing with applications under this section have been amended to bring them into line with the new constructional By-laws, and have now been published as a guide for architects and others. The document includes a Code of Practice approved by the L.C.C. in relation to underground garages in (cube) buildings.

These documents can be obtained from the Record Keeper, County Hall, London, S.E.1, or from the Staples Press, Ltd., Mandeville Place, London, W.1, or from any bookseller, as follows: the By-laws (publication No. 3790), price 3*s.* 6*d.*; Principles for guidance on buildings of excess height (publication No. 3795), price 1*s.* 3*d.*; Explanatory Memorandum (publication No. 3796), price 1*s.*; postage is extra on the three publications.

**Handmade Facing Bricks.** Despite considerations of speed, economy and availability a well-tried building material very seldom goes quite out of fashion or use. Perhaps this is particularly true of facing bricks, and here the difficulty may lie in getting sufficient quantities of them. The JOURNAL is informed by the Rural Industries Bureau that they not only have a list of rural yards where such bricks are made but are also, in general, conversant with the type of brick each yard produces. Architects in need of such information should apply to the Bureau at 35 Camp Road, Wimbledon, London, S.W.19.

**Celobestos.** Messrs. Celotex, Ltd. have introduced a fire resistant insulating board to which they have tentatively given the name Celobestos, made in boards ¼ in. thick, 2 ft. wide, and up to 8 ft. long. The core of the boards is the same as ordinary Celotex but surfaced on one or both sides with asbestos bonded with a fire and water resistant adhesive. Celotex is made from cane fibre, or bagasse as it is sometimes called.

At a Press demonstration a panel of Celobestos 12 in. square was exposed to the flame of a blow-lamp. In a minute or two the area in contact with the flame began to darken and the asbestos surface bulged, due to the expansion of the air in the minute cells in the cane fibre. The test was continued for about 20 minutes and no spread of flame occurred. Official tests under B.S. 476 put the board into Class I spread of flame, a class which allows a flame spread of up to 6 in.

In certain positions the state of affairs at the back of a board may be important; after about 5 minutes of the test a circle immediately behind the flame on the front surface was just warm, but the edges of the panel were cool; after 10 minutes the edges were still cool but the centre was too hot to touch and a brown circle had appeared. It was explained that the brown circle was due to the smoke from the cane fibres which had carbonised under the heat of the blow-lamp.

After 20 minutes the blow-lamp was removed and the panel examined; the edges were still cool enough to handle, but the brown circle at the back had increased a little. The temperature of this circle was said to be about 170° F. Messrs. Celotex stated that the resistance of the new board to heat loss is equal to that of a brick wall 11½ in. thick. The asbestos facing has a good light-reflecting factor, and it can be decorated if desired. The address of Messrs. Celotex, Ltd. is North Circular Road, Stonebridge Park, London, N.W.10.

**National Building Studies.** The title of Research Paper No. 13 is *Studies in composite construction. Part 1. The composite action of brick panel walls supported on reinforced concrete beams.* The tests described were originally carried out to determine the most economical design of foundation beams spanning short bored piles for the support of brick walls of houses, schools and the like, but it became clear that the results of the tests have a more extensive application, in the design of lintels carrying brick walls, for instance, and in the general study of composite action in multi-storey buildings where beams carry brick or stone walls.

Mention is made of the usual practice of designing a lintel to carry a triangular load of brickwork contained within angles of 60 degrees from each end, but if there are window or door openings complications arise It is stated that the greatest advantage from composite action of wall and beam is obtained when such openings are kept away from the supports and preferably placed at the centre of the span. In some cases the whole of the beam, including the top (compression) reinforcement, was found to be in tension. Diagrams and photographs show the effect on the beam of different kinds of loading.

The document is published by H.M.S.O. price 2*s.* net.

**Electrical Ring Circuits.** In the review of the 1951 Building Exhibition, published in the February 1952 JOURNAL, a short note appeared on ring circuit wiring, or ring main as it is often called, and in view of the

increasing use of the system and the economy it effects a fuller description may be useful.

Most persons are familiar with the 13-ampere plug and socket used on the ring circuit, but perhaps it is not generally understood why it was necessary to introduce and standardise yet another gauge socket when matters were already confused by the existence of six different standard gauges and several non-standard ones. The new standard, which it is hoped will be universally used for domestic and similar purposes, came into being as a result of the work of various committees.

Post-war Building Study No. 11, 1944, *Electrical installations*, included in its recommendations that houses of 850 to 1,000 ft. super, and flats of lesser area, should be wired for three separate circuits, namely lighting, cooking and socket-outlet, each circuit to be controlled by a separate single-pole fuse, and that all socket-outlets should be supplied from a ring circuit starting from and ending at the fuse terminal at the consumer's supply control and passing through each room in turn. The P-W.B.S. considered it permissible to connect as many as 20 of the proposed standard socket-outlets on the ring circuit, which would be fused for 30 amperes at the consumer's supply control.

A comparison of the cost of installation in small houses and flats in accordance with (*a*) pre-war regulations and (*b*) the proposed ring circuit with locally-fused plugs and socket-outlets indicated that a saving of approximately 25 per cent would be effected by adoption of the ring circuit system, and in an appendix to the P-W.B.S. it was stated that the unanimous conclusion reached was that a completely new type of 3 kilowatt (13 amperes) 230 volt socket-outlets and fused plugs should be adopted as the 'all-purpose' domestic standard.

As a result of these recommendations British Standard 1363: 1947 was drawn up. It laid down a specification for 13-ampere fused plugs and 13-ampere flush-mounted shuttered socket-outlets intended for use in domestic installations where—in a ring circuit connected to a single-pole 30-ampere fuse—it was necessary to provide a fuse at each point of outlet. The plugs will accommodate fuses of 3, 7 and 13 amperes current rating complying with B.S. 1362: 1947, and may be readily distinguished by their rectangular section pins for insertion into corresponding apertures in the socket-outlets. The construction of these socket-outlets is such that when the plug is withdrawn the current-carrying socket contacts are automatically screened by shutters. The shapes and sizes of the plug pins are detailed in the B.S. and the object of making them of rectangular section is to ensure that the unfused round-pin type cannot be inserted into ring circuit socket-outlets. The specification contained in the B.S. has only a limited function in laying down gauges, and to a certain extent materials and tests; quality and workmanship remain in the hands of the manufacturer.

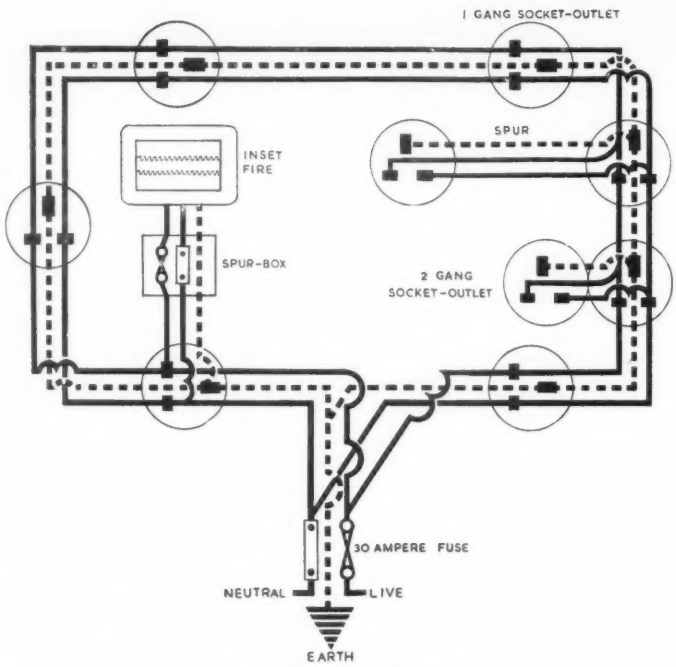


Diagram illustrating the electrical ring circuit.

In the Regulations for the Electrical Equipment of Buildings, 12th Edition 1950, issued by the Institution of Electrical Engineers, Regulation 201 (*c*) exemption (iii) states that a final sub-circuit in the form of a ring of which both ends are brought into a terminal of a fuse having a rating not exceeding 30 amperes may serve not more than 10 socket-outlets of 13-ampere rating, provided that in small houses or residential flats having a floor area not exceeding 1,000 sq. ft. the number of such socket-outlets served by such a ring circuit shall not be restricted.

The advantage of the ring circuit is that any appliance of output up to 3 kilowatts can be connected by its plug to any socket-outlet on the circuit; that is why the fuse is housed in the *plug* and not in the *socket-outlet*, otherwise a load of 2 or 3 kilowatts could be connected to a socket-outlet fitted with only a 3-ampere fuse, which would blow. Another point is that current is supplied to each socket-outlet from two directions, since the ring circuit starts from and returns to the terminals of the main fuse; thus a conductor normally only capable of carrying a total load of 15 amperes will, in a ring circuit, carry 30 amperes. The mandatory main 30-ampere fuse prevents overloading and the load of each socket-outlet is limited, since every 13-ampere plug conforming to B.S. 1363: 1947 contains a cartridge fuse.

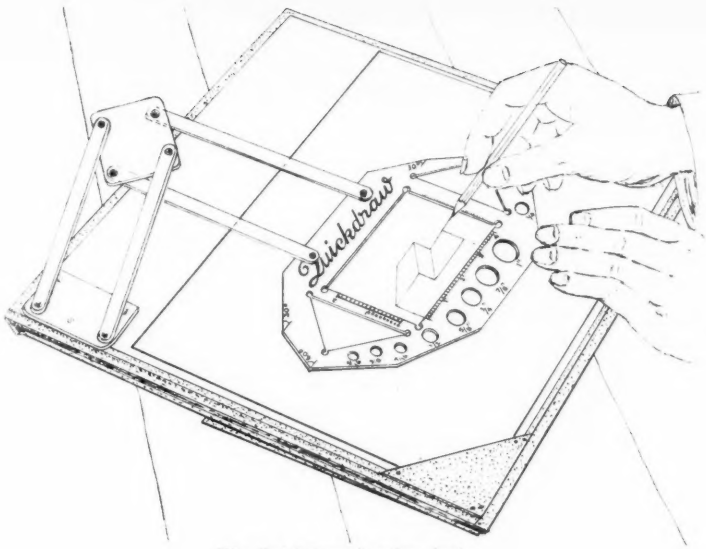
As will be seen from the accompanying diagram, the ring circuit has three rings of conductors—the live (or line) conductor with its insulation coloured red on the outside, the neutral coloured black, and the green earth conductor. The plugs have three terminals, each connected to the appropriate conductor. Spurs, or branches, may be taken from the ring and fixed appliances, such as panel fires, may be connected to the ring through a spur-box containing its own fuse.

It may be taken for granted that the householder will buy additional appliances from time to time, and in the case of a non-ring circuit this means either using adaptors, with the risk of overloading that particular section of the wiring, or else running new wiring to an additional outlet point, which is expensive and inconvenient, because before the introduction of the ring circuit system 3-kilowatt (15-ampere) socket-outlets had to be wired from a separate position on the distribution board and this meant a long run of cable and conduit just for one outlet. This provided a temptation to reduce the cost of the electrical installation by cutting down the number of such outlets.

If the ring circuit is properly applied the cable and circuit will be planned to run round every room in the dwelling, therefore the cost of an additional outlet is virtually the cost of the wiring accessories plus time for fitting. Thus the old idea of economising by cutting down the number of outlets is invalidated, and it is obviously worth while to provide a generous number of outlets at the time of installation.

Our illustration is adapted from a diagram in a leaflet produced by Messrs. M.K. Electric, Ltd. of Wakefield Street, Edmonton, London, N.18, in which they describe and illustrate 13-ampere accessories for ring circuit wiring, and also their A.C. switches.

**A drawing device.** We all remember our early days when we were sent out to make sur-




The Quickdraw drawing device.

veys of existing buildings preparatory to rebuilding, when we usually went out with a sketch book in which our lines got distinctly shaky as we came to the bottom of the page and had nothing on which to rest our hands. A new device called the *Quickdraw* should prove useful for such survey work, and for several other purposes. It consists of a rexine-covered folder which, when opened, reveals a transparent templet fastened by arms to a toggle hinge that allows the templet to be moved about over a sheet of paper. The templet is cut with accuracy to produce the principal angles, and also triangles and rectangles, calibrated in inches and millimetres. There are also holes for producing circles of diameters from $\frac{1}{16}$ in. to 1 in. Nine pencil point holes allow hatching to be done with the aid of a ruler.

The accompanying illustration shows the device in use, and it will be seen that the templet contains an open oblong, into which loose templets can be placed for drawing shapes by other than straight lines or circles. Corners in the folder hold the drawing-paper in position and only one pin is needed to keep it rigid. The weight is 2 lb. and the maximum paper size is 10 in. by 13 in. The present price is 63*s.* plus 10 per cent. If desired, the device can be unscrewed from the folder and be attached to any suitable board.

The device needs no accessories beyond pencil and paper and it enables plans and sketches to be made rapidly and to scale.

The Quickdraw can be obtained from the Quickdraw Company, Ltd., 127, Gunnersbury Avenue, London, W.3.

**Development Plans for Scotland.** Under the Town and Country Planning (Scotland) Act 1947 local planning authorities in Scotland are required to carry out a survey of their district and to submit to the Secretary of State a report of the survey together with a development plan showing their proposals. To assist planning authorities in this work the Department of Health for Scotland issued during 1948 and 1949 a series of technical broadsheets so that the maps should be prepared on a uniform basis throughout the country.

The original broadsheets Nos. 1–24 have now been reprinted, but a number of amendments have been made, mostly of a minor nature. The British Colour Council have produced formulae for a set of inks in 80 standard colours, and the Department of Health for Scotland and the Ministry of Housing and Local Government for England and Wales have agreed to recommend the use of these inks by all planning authorities. These inks are called 'Town and Country Planning Inks' and may be obtained from dealers in drawing materials. Each bottle of ink is numbered and a colour chart is supplied with the inks. Each shade on the chart is numbered and the corresponding number appears on the bottle. Only colours shown on the chart have been used in the compilation of the technical broadsheets.

The first 12 broadsheets deal with surveys to be carried out by local planning authorities and indicate the nature and extent of the minimum surveys considered necessary. The second 12 set out the form and content of development plans, and No. 13 describes generally the maps to be submitted to the Secretary of State.

The Department of Health for Scotland state that two important departures from the practice in England and Wales are the retention of colour notations for development plan maps and the inclusion of a 'survey analysis map' to be submitted with the development plan. These departures have proved useful in Scotland in promoting general comprehension of the problem in each area and its solution, without making it necessary for everyone to study maps and documents either very closely or in great detail.

These technical broadsheets can be obtained from H.M.S.O., price 7*s.* net, under the title 'Town and Country Planning (Scotland) Act, 1947, Development Plans Technical Broadsheets Nos. 1–24'.

**Building Research 1951.** The Department of Scientific and Industrial Research have published their report for the year 1951. It refers to the problem of balancing the work of the Building Research Station, experimental and advisory, against the available staff resources. 'Effective application and advisory work depends not only on research, but also on the experience that comes from continuous study of practice.'

In the report of the Director of Building Research some 68 subjects of investigation carried out by the B.R.S. are briefly mentioned, but such enumeration gives of course only a slight idea of the work involved. Under the heading *The Study of House Maintenance* the report states that much attention is given to methods of reducing the initial cost of housing, but it is important that the methods adopted should not give rise to high maintenance costs in the future. The savings in initial cost which some forms of construction appear to offer may be completely offset by the higher cost of maintenance.

During the year under review 1,462 inquiries were received from architects and professional consultants, out of a total of 5,083. The report may be had from H.M.S.O., price 4*s.* 6*d.* net.

**Codes of Practice recently published.**

C.P. 122 (1952) **Walls and partitions of blocks and slabs.** This Code deals with clay blocks and concrete blocks, gypsum or anhydrite blocks, wood-wool building slabs, plasterboard and plaster construction, and hollow glass blocks. Points in design are considered for the respective materials, including sound insulation and absorption, fire resistance and combustibility, avoidance of crack formation, and strength, stability and resistance to impact. Sections describe work on and off the site, inspection and testing, and maintenance. Appendices and tables give specifications for hydraulic quicklime, hydrated hydraulic and quick-hardening limes, dimensions and tolerances of blocks, weights and thicknesses, sound reduction values, thermal transmittance values, and fire resistance gradings. Diagrams illustrate technical requirements. Obtainable from the B.S.I., 24 Victoria Street, London, S.W.1, price 9*s.* post free.

C.P. 310 (1952) General Series. **Water Supply.** This Code deals with water supplies to houses, schools, hospitals, public and industrial buildings, from wells, bore-holes, rivers, etc., or from a public water undertaking, but it does not cover all aspects of water supplies for fire fighting. Price 6*s.* post free.

# Practice Notes

Edited by Charles Woodward [*A*]

**IN PARLIAMENT. Development Charges (Repayment).** Asked if he would arrange for some part of the £300 million assigned for compensation in development charges to be used for repayment to people who have already paid their development charge on a private house that they have built for their own occupation, the Chancellor of the Exchequer replied: No. The Government do not propose to repay development charge as such, but if a person who has paid charge holds an admitted claim on the £300 million he will be paid up to the amount of the charge with interest, provided that that does not exceed the claim. If he does not hold a claim, there may in certain circumstances be a balance due to him after the holder of the claim has been satisfied. (16 December 1952.)

**Derelict Premises (Owners' Reponsibility).** Asked if he was aware that owners of houses and premises destroyed by enemy action were still forced to maintain safety and health standards of the derelict premises and to pay ground rent, although unable to use the land; and if he would take steps to release these people from this obligation, the Parliamentary Secretary to the Ministry of Housing and Local Government replied: My right hon. Friend cannot relieve the owners of war-damaged premises from their statutory responsibilities for preventing danger or nuisance to the public. With regard to the payment of ground rent, I would refer the hon. Member to the provisions of the Landlord and Tenant (War Damage) Acts 1939 and 1941. (9 December 1952.)

**Town and Country Planning Act. (Inquiry Costs.)** Asked if he would take powers to reimburse property owners for their costs when their objections were upheld at hearings held under the Town and Country Planning Act, the Minister of Housing and Local Government replied: I think it better in the general interest to adhere to existing practice. (16 December 1952.)

**BUILDING LICENSING.** The Minister of Works has now made the Control of Building Operations (No. 18) Order, 1952, which came into operation on 1 January. The Order provides that between 1 January and 31 December 1953 the sum of £2,000 may be spent without a licence on industrial buildings and buildings used wholly for the purpose of agriculture (other than dwelling houses). During the same period the sum of £500 may be spent without a licence on any other property.

Industrial buildings and agricultural buildings are defined in the Order, as is also 'a property'.

The Order is obtainable at H.M. Stationery Office, price 3*d.* net.

**CENTRAL LAND BOARD AND WAR DAMAGE COMMISSION.** The London (City) Offices of the Central Land Board and War Damage Commission have now moved to City Gate House, Finsbury Square, E.C.2. Telephone MONarch 6011.

**CENTRAL LAND BOARD. POWERS OF PURCHASE.** Pending the coming into force of the Town and Country Planning Bill 1952, now before Parliament, the Board do not propose to consider any new acquisitions of land under the English and Scottish Acts, except where before 18 November 1952, a Notice to Treat had been served in respect of a compulsory purchase order already made by the Board or a contract had been entered into by the Board for purchase of land by agreement. (Press notice, 11 December 1952.)

**PLASTERBOARD PRICES.** The Gypsum Building Products Association announce that as from 1 December 1952 the price of gypsum plasterboard has been reduced, the general effect of which is that all prices of wallboard, baseboard and lath are decreased by ½*d.* per sq. yd.

**BUILDING WAGES. Heating, Ventilating and Domestic Engineering.** The Joint Conciliation Committee of the Heating, Ventilating and Domestic Engineering Industry have awarded increases in wages to craftsmen, adult males over 20 and adult males aged 18 to 20. The revised rates are given in the above table.

**Revised Building Wage Rates**

| Grade | District | Rate per hour | |
|---|---|---|---|
| A. Craftsmen | London, within 15 miles radius of Charing Cross | | 3*s.* 8½*d.* |
| B. Craftsmen | All other districts in Great Britain | | 3*s.* 7½*d.* |
| | | 18–20 years of age | Over 20 years of age |
| A. Adult Males | London, within 15 miles radius of Charing Cross | 2*s.* 10½*d.* | 3*s.* 1½*d.* |
| B. Adult Males | All other districts in Great Britain | 2*s.* 9½*d.* | 3*s.* 0½*d.* |

**Electrical Contracting Industry.** The National Federated Electrical Association and the Electrical Trades Union have agreed upon an increase of 2*d.* per hour in the wage rates of journeymen electricians to operate on and from Monday 17 November 1952, with consequential adjustments in the rates of other classes of operative.

**SELECTED APPEAL DECISIONS.** Bulletin No. XI has now been published, being appeals under the Town and Country Planning Act 1947. It is obtainable at H.M. Stationery Office, price 6*d.* net.

**MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Town Development Act 1952.** Circular 88/52, dated 1 December 1952 refers to a Memorandum issued by the Ministry giving guidance to local authorities about the purpose and application of the Act. The Memorandum is obtainable at H.M. Stationery Office, price 6*d.* net.

The particular object of the Act is to relieve congestion in the overcrowded cities by furthering the expansion of smaller towns suitably placed to take people from the cities. Where the city cannot find enough land in or near its own borders to solve its housing problems the new Act will facilitate the acquisition and development of sites further afield. The Minister hopes that authorities will be able to reach agreement by negotiation between themselves and Ministry officials will help in informal discussions to settle any points of difficulty. The Board of Trade will co-operate with the Minister in advising the local authorities about industry for expanding towns. New industry will be necessary in most instances to provide people with work near their homes. It is expected that this will come mainly from congested areas.

Under the Act the big city which is exporting some of its population can contribute to the costs of the smaller town which is to receive them. In particular, it can pay the rate contribution on the new houses during the earlier years of expansion before the receiving authority is strong enough to carry the burden. The Exchequer can also contribute in certain circumstances, for instance on water supply and sewerage works.

**Steel Distribution Scheme.** Circular 89/52, dated 5 December 1952 states that for period 1 of 1953 onwards no further use is to be made of I.S. Authorisations (A) and (C). Instead the acquisition of both alloy and non-alloy material will be authorised on a new form, 'I.S. Authorisation (U)'. I.S.B. Form 89 is to be used amended as described. The new form is being adopted forthwith for housing work other than that done under licence and for non-housing work, in respect of which authorisations are issued by the Department. Housing Authorities should apply to the Department's Principal Regional Officer (or to the Regional Director, Ministry of Works) for supplies of I.S.B. Form 89 for use in connection with housing work done under licence, and should in future use only this form, amended as described, in respect of period 1 of 1953 and subsequent periods. The amendments must be carried out accurately to avoid offering scope for pretended misunderstanding to the detriment of any charges which might be brought in Court.

Notes entitled 'Notes upon I.S. Authorisation (U) for both Alloy and Non-Alloy Material' have been published and are obtainable at H.M. Stationery Office, price 2*d.* net.

**Houses to be built under licence.** Circular 93/52, dated 17 December 1952 issued to

housing authorities in England, states that the Minister has decided that from 1 January a licence to build—subject to planning and bye-law consents and the conditions specified in the Appendix to the Circular—should be issued without question on application on the prescribed form CL 1136B to (1) any person who wishes to build or have built a house of not more than 1,000 sq. ft.; and (2) any builder who wishes to build up to 12 houses of not more than 1,000 sq. ft. He therefore requests the local authorities, who in this matter are the agents for the Government, to issue licences accordingly.

Applications on the prescribed form for a licence to build a house between 1,000 and 1,500 sq. ft., or from a builder to build more than 12 houses of whatever superficial area up to 1,500 sq. ft., should continue to be encouraged. They should be considered on their merits and in the order in which they are received. The local authority should give consideration to all the circumstances, including the locality of the site on which the house or houses are proposed to be built and any restricted covenant attached to it.

The Appendix to the Circular contains the conditions under which both kinds of licences will be issued, i.e.,

(1) Houses may be built for letting or for sale.

(2) Licences will continue to be issued by the local authority in whose area the house is to be erected.

(3) Plans and outline specification should be approved by the local authority. The general specification and the amount of supervision exercised should be equivalent to those laid down in the scheme operated by the National Housebuilders Registration Council (82 New Cavendish Street, London, W.1.).

(4) Superficial areas should be measured in accordance with the Notes on the Form of application for a licence, CL 1136B.

(5) Scarce materials should not be permitted to a greater extent, size for size, than in the local authority's own houses. Plan and specifications should be examined to ensure that the recommended economies of softwood timber are being made. The amount of softwood authorised for the house should be settled with due regard to the alternatives specified, e.g. metal windows and hardwood floor. The recipient of the licence should be warned that in his own interest he should await the receipt of the timber licence from the Department before starting to build. The local authority should check the superficial floor area and state it on the licence for the information of the timber licensing authority.

The use of more expensive substitutes, finishes and fittings than those generally used in the local authority's houses is an advantage, and should not be discouraged or questioned in the assessment of total cost.

(6) Applicants for licences should be ready to start building within a reasonable period. If the licence form contains a condition that construction should be started within two months, it should be deleted.

(7) Arrangements may continue to be made between local authorities for the transfer of licences for houses in excess of 1,000 sq. ft.

(8) Licences should be issued to the building owner, subject to a limit of building cost and to a condition prescribing the maximum selling price and rent chargeable. This condition is required to be entered in the Land Charges Register. In the case of leasehold land local authorities are asked to state both a freehold and a leasehold selling price. The latter will usually be the freehold price less the capitalised value of the ground rent.

(9) The figure included in the licence itself is the amount of expenditure authorised to be incurred by the person to whom the licence is issued. The local authority's experience of the cost of building Council houses will be some guide to this figure but full allowance should be made for differences in size, for any special costs of building on particular sites, e.g. restrictive covenants or building in stone to harmonise with the neighbouring village or abnormal cost of the land or its development, for the specification to which the house is to be built and for any other relevant circumstance.

(10) There are circumstances in which it will be proper and desirable to issue a supplementary licence. The holder of the licence may be put to unavoidable additional expenditure between the time when the licence is issued and the completion of the house, e.g. there may be rises in the ruling rates of wages and materials or it may be found necessary or desirable to substitute more expensive materials or equipment during the building of the house. Supplementary licences should be sought and issued before the works are completed.

(11) The approved maximum sale price is to be determined by the local authority and should represent what in their opinion is the fair price for the completed house based on the cost of building, land and other costs incidental to building a house (including architect's, legal and other fees).

The rental to be specified (particularly in cases where the houses or flats are being built for letting and not for sale) should provide for a reasonable commercial return on the total cost (including land, etc.) after making due allowance for repairs, maintenance and management. Although this should not normally be necessary, local authorities may, in cases of difficulty or dispute, obtain assessments from their private consultant valuers.

Where a supplementary licence is issued the local authority should reassess and restate the maximum selling price and rent in the supplementary licence; a corresponding entry should be made in the Land Charges Register. [Attention is directed to the provisions of section 43 (1) and (5) of the Housing Act 1949. The latter subsection leaves it to the local authority to decide whether the nature and scope of any later work carried out to the house (as defined in section 9 of the Building Materials and Housing Act 1945) is such as to justify a direction being issued increasing the maximum selling price and rent, and if so by how much.]

**Discontinuance of Defence Regulation 68CA.** By an Order in Council (S.I. 1952, No. 2091) which came into effect on 7 December 1952, Defence Regulation 68CA was revoked. Under the Town and Country Planning Act 1947 the permission of the local planning authority is required in respect of any material change of use and the Minister is satisfied that the powers thus made available to local planning authorities are adequate to enable them to take into account current housing needs throughout their area in dealing with an application to develop. There is no change of the Minister's policy in regard to the loss of housing accommodation and in his view the need to prevent this loss where possible is as great as ever and local planning authorities should always bear this in mind when dealing with applications for planning permission.

The Minister wishes to make it clear that under the 1947 Planning Act a local planning authority, having had regard to all the material considerations, may refuse permission for development notwithstanding that the development would be in accord with their development plan. Planning permission may thus be refused for the conversion of housing accommodation to another use even when that use is fully in accord with the plan. When circumstances have changed and the housing situation has become easier a permission may of course be granted on a fresh application.

In order to ensure that the views of housing authorities are fully known to local planning authorities before decisions are taken on applications to change the use of housing accommodation, the Minister has provided by direction under the General Development Order for consultation by them with the housing authorities on these applications. The direction also provides that in the event of disagreement between the authorities on such a case, the local planning authority shall refer the application to the Minister. [The direction under the General Development Order is dated 12 December 1952, and is entitled The Town and Country Planning (Housing Accommodation) Direction 1952.]

**Building Licensing. Defence Regulation 56A.** Circular 95/52, dated 31 December 1952, addressed to Housing Authorities in England, refers to the amount that may be spent on any single property without a licence between 1 January and 31 December 1953; as provided by the Control of Building Operations (No. 18) Order (S.I. 1952, No. 2111). The term 'industrial buildings' in the Order means, generally speaking, factories and workshops. It does not include commercial premises, shops, banks, offices,

warehouses and the like. 'Agricultural buildings' include all farm buildings except the farmhouse and the farm workers' cottages.

The Principal Regional Officer continues to be responsible for issuing timber licences for both licensable and 'free limit' work.

**Postponement of Revaluation of Property.** The Minister of Housing and Local Government has made an Order under the New Valuation Lists (Postponement) Act 1952, postponing for two years the dates for the making and coming into force of the first and subsequent valuation lists under the Local Government Act 1948. [The New Valuation Lists (Postponement) Order 1952, S.I. 1952, No. 2182.]

**PLANNING PROJECTS IN SCOTLAND.** The Department of Health for Scotland have published a 'Bulletin of Selected Appeals Decisions' given by the Secretary of State for Scotland under the Town and Country Planning (Scotland) Acts. The bulletin contains summaries of appeals by people whose applications have been refused by the local planning authority, or granted subject to conditions. There are 27 cases dealing with the erection of houses; change of use; working of minerals and a miscellaneous section. The bulletin is obtainable at H.M. Stationery Office, price 1*s*.

**THE ARCHITECTS' REGISTRATION COUNCIL OF THE UNITED KINGDOM.** The following letter has been sent by the Registrar of A.R.C.U.K. to the County Councils Association, the Urban District Councils Association, the Rural District Councils Association, and the Association of Municipal Corporations:—

2 January 1953

Dear Sir,

The Architects' Registration Council, who are responsible under Section 7 of the Architects Registration Act, 1931, for maintaining a correct standard of conduct in the architectural profession, will be much obliged if you will draw the attention of your members to the following provision in the Code of Professional Conduct issued for the guidance of architects:—

'The growth of an architect's practice should depend on merit. He must not advertise or tout for business or allow any member of his staff so to do. Nor may he (save to members of his staff) give or offer remuneration, or other consideration, for the introduction of clients or of work.'

Any architect who writes to a local authority offering his services to the local authority, or asking that his name be placed on a list or panel of architects to whom work may be entrusted, should be advised to apply to one of the following professional bodies: any local Architectural Society, The Royal Institute of British Architects, The Royal Incorporation of Architects in Scotland, The Royal Society of Ulster Architects, The Incorporated Association of Architects & Surveyors, The Faculty of Architects & Surveyors, The Architectural Association, The Association of Building Technicians, The Institute of Registered Architects, who will take note of his application and take such action by way of recommendation or otherwise as they think fit.

There is no objection to an architect replying to an advertisement issued by a local authority inviting architects to offer their services, nor is there any objection to a direct approach to a local authority by persons, whether registered as architects or not, who desire to be employed as assistants under the Architect to the authority.

Yours faithfully,
(*Signed*) PEMBROKE WICKS,
*Registrar, Architects' Registration Council*

# Conference on Advisory Panels

A most successful conference* of representatives of the Advisory Panels was held at the R.I.B.A. on Tuesday 14 October. It was the first Panel Conference to be held, but as the number of active Panels has greatly increased since the passing of the 1947 Planning Act the Central Panels Committee believed that an opportunity to exchange information and to discuss problems arising in Panel work would be welcomed. This belief proved fully justified as the Conference was very well attended. Twenty-one County Panels and three County Borough Panels arranged to send representatives, the majority of whom were the architect members of Panels, but the delegates also included county planning officers and members of county planning committees.

The Conference was opened by the Chairman, Mr. Stanley C. Ramsey [*F*], who spoke on the great variety of Panel organisation; the Panels being differently constituted and working in different ways in various parts of the country. This has sometimes given rise to criticism, but the advantage of retaining variety in organisation is that it permits the Panel system to adjust itself to varying local conditions. Mr. Ramsey was followed by Sir Patrick Abercrombie [*F*], who said that criticism of the Panel system, which had sometimes been virulent, was apt to disappear when its work was properly understood. Sir George Pepler [*Hon. A*] then said that he hoped to hear something of the successful work of the Panels as well as of the problems confronting them, and Colonel W. S. Cameron, the representative of the Institution of Municipal Engineers on the Central Panels Committee, spoke on the need for Panel advice.

The Panels had been invited to propose subjects for discussion, and there was a very full agenda. The first subject was concerned with the provision of Panel advice in counties where the County Planning Authority has delegated powers for the regulation of the external appearance of buildings to the Councils of County Districts; the discussion being opened by Mr. James W. R. Adams (County Planning Officer for Kent), followed by Mr. J. B. Denman [*A*] (Central Panels Committee), the Warwickshire Architectural Advisory Panel and the Harrow Panel, before the subject was open to general discussion.

A discussion opened by Major T. F. Thomson [*L*] (Hampshire County Planning Officer) and Mr. Allanson Hick [*F*] (East Riding County Council Advisory Panel) on the different methods adopted by Planning Authorities in submitting plans to a Panel, which vary from the submission of a few selected plans to examination of all applications received, covered a wide range of subjects, including the permission given by the General Development Order 1950 for certain work to be undertaken without planning consent being necessary. Mr. James Kegie (Monmouthshire County Planning Officer) brought the Conference back to a discussion of the original topic on the agenda by calling for a statement of Panel policy on the subject.

Difficulties confronting Panels due to the low standard of presentation of many deposited plans was a subject of general concern, having been proposed for inclusion on the agenda by the Isle of Ely Panel, the West Sussex County Panel of Architects, the Worcestershire Panel Advisory Committee and the York Panel.

Mr. Arthur Cripps [*L*] (Chairman, Isle of Wight Panel) opened a discussion on the policy to be adopted by Panels when dealing with plans and elevations which could not be recommended for approval. Mr. T. H. Longstaff [*F*] (Huntingdonshire County Planning Officer) followed, and emphasised the duties of Planning Authorities and Panels in this matter.

An interesting discussion took place in the afternoon on the payment of fees to Panel members, the subject having been raised by the Nottingham, Derby and Lincoln Architectural Society's General Panel. Five County Panels are now working on a paid basis, and while payment is welcomed as an indication of the Authorities' appreciation of Panel services, the Chairman expressed the hope that questions of payment would not be allowed to check the spread of the Panel movement, for Panels in not having pressed for payment commensurate to their services to the community had won a large measure of public support and confidence in their work.

The difficulty of ensuring that plans shall be carried out as approved and that of reconciling the need for suitable materials with their present high cost were also among the subjects discussed during the afternoon session. The latter had been proposed by the Isle of Ely Panel, and a most interesting discussion was opened by Mr. P. G. Laws (Isle of Ely County Planning Officer).

The proceedings concluded with a vote of thanks to the Chairman, and to the R.I.B.A. for having so kindly allowed the Conference to be held at the Institute.

* We regret that for reasons of space this report had to be omitted from the December JOURNAL.

# The Encouragement of Craftsmanship in Building

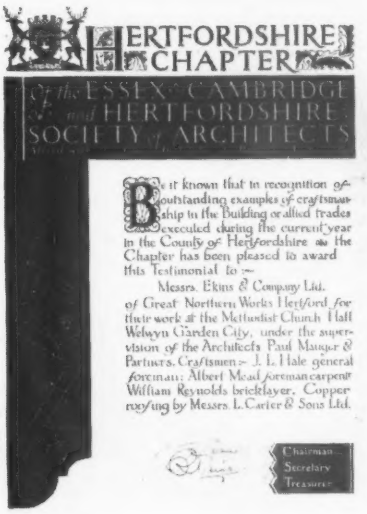
*The Hertfordshire Chapter of the Essex, Cambridge and Hertfordshire Society of Architects have instituted the award of a certificate annually for outstanding craftsmanship in a building within the county boundaries. We reproduce here a photograph of the certificate and an explanatory note of the scheme by Mr. H. G. Coulter, M.B.E., M.C. [F], Chairman of the Chapter.*

CRAFTSMANSHIP is a matter of general concern to all engaged in building. For some time past, much thought has been given to this problem by the Hertfordshire Chapter of the Essex, Cambridge and Hertfordshire Society of Architects. It cannot be denied that standards have lowered so much in post-war years that architects now qualifying are rarely able to see good examples in new work. This is a serious matter to all concerned, because without experience of good craftsmanship during the period of their training, young architects can have nothing on which to base their judgment on work for which they will soon be responsible.

A similar state of affairs exists among younger tradesmen in the building industry itself. It is clear, therefore, that unless steps are taken to improve matters, we will eventually reach a stage where the standard of craftsmanship in building as we formerly knew it will be a thing of the past.

Members of the Hertfordshire Chapter think that encouragement of craftsmanship is one of the most useful services it can perform. With this end in view, the Chapter is awarding annually a certificate for a building erected within the county boundaries exhibiting craftsmanship of outstanding merit. Any building which has been completed within the previous three years may be nominated for the award by any member of the Chapter. The nomination may be made on account of general merit of craftsmanship or for a part or particular trade within the building. The award is made by a jury appointed by the Chapter Executive. Where the award is for general merit, a certificate is given to the general contractor. Should any feature receive special commendation, then mention is made on the certificate and a similar certificate may be awarded to the sub-contractor who has been responsible for this part of the work. Special mention is made on the certificate of any tradesman who has been prominent in contributing to the quality of the work and each tradesman mentioned is presented with a book suitably inscribed as a memento of the occasion.

The first certificate under this scheme was awarded on 10 October 1952 by the Chapter to Messrs. Ekins & Co. Ltd. of Hertford as builders of the New Methodist Church Hall at Welwyn Garden City under the supervision of the architects, Messrs. Paul Mauger & Partners [*FF*]. Special mention was made of the copper roofing by Messrs. L. Carter & Sons Ltd. who were awarded a similar certificate. The general foreman, foreman carpenter and bricklayer were mentioned as craftsmen in the certificate.


HERTFORDSHIRE CHAPTER
of the ESSEX CAMBRIDGE and HERTFORDSHIRE SOCIETY of ARCHITECTS
Be it known that in recognition of outstanding examples of craftsmanship in the Building or allied trades executed during the current year in the County of Hertfordshire the Chapter has been pleased to award this Testimonial to :-
Messrs. Ekins & Company Ltd.
of Great Northern Works Hertford for their work at the Methodist Church Hall Welwyn Garden City, under the supervision of the Architects Paul Mauger & Partners. Craftsmen :- J. L. Hale general foreman; Albert Mead foreman carpenter William Reynolds bricklayer. Copper roofing by Messrs. L. Carter & Sons Ltd.
Chairman
Secretary
Treasurer

# Book Reviews

**Decorative Art, 1951-52.** *The Studio* year book. *Rathbone Holme* and *Kathleen Frost*, eds. 11¼ in. 124 pp. text illus. Lond. and New York. [1952.] £1 10*s*.

This annual production illustrates a wide selection of domestic furnishing (including textiles), furniture, arrangement of rooms and general accessories for the home, chosen from many countries. It is introduced with a typical Neutra article, showing examples of his work, all of the high standard that one expects. Throughout the book the editors have, generally speaking, preferred contemporary furniture to period, although one or two rather dubious examples of modernised period have crept in.

The photographs are well taken on the whole, but one feels that many of the rooms and furniture illustrated depend much on colour and surface interest, which are lacking in small photographs in black and white. Many examples from America are chosen, but surely not the best. Most seem to be rather bare, with dramatic fittings more suitable to public places than homes, and one doubts whether they are really typical of the trend of American design.

Amongst this bewildering variety of furniture appear, of course, several pieces which might well have been omitted—for example, the Austrian dining-room and a Louis XIV room illustrated in colour, with deerskin-covered chairs lacquered cream and gold. On the other hand there are a few outstanding examples, probably the best in the book being the kitchen shown in colour, designed by William Snaith, with a delightful fireplace by Peter de Guard. Noteworthy also is the furniture of the designers Peter Hvidt, Molgaard Nielsen and Borge Mogensen, who show some beautiful work revealing a clear understanding of the material used and interpreting the basic form of furniture with considerable elegance, but the designs shown by Finn Juhl are unworthy of his abilities.

Some utility furniture from this country is included, and here the designs by H.K. Furniture and Geoffrey Dunn are especially creditable, influenced as they are inevitably by the price limits in the British retail trade.

One notices an almost universal cliché of putting supporting legs, whether of chairs or tables, at an acute and unstructural angle for which there seems little reason, and one fears that much of the work shown is merely fashionable and will be regarded with distaste in a short time.

There is a section on textiles, generally of a pleasant and adequate domestic standard, but the light fittings are almost without exception poor, and one wonders why nothing from Arte Luce of Milan appears. This section only emphasises what a difficult problem it is to light the home attractively in the modern idiom.

Of the glassware, with its smooth round shapes, one can say very little, and the same is true of the ceramics, with the exception of Mr. Lindberg's work, which has great decorative value. The remainder suffers from a refined peasant flavour, which possesses neither the robustness of peasant art nor the elegance of tradition. There is also a chapter on silver, in which small salt cellars designed by Grete Prytz and made by Tostrup are good examples.

To sum up, the book is of real value in recording the fashions and changes of taste which occur from year to year. But whilst appreciating the difficulties of the compilers, one feels that they have not succeeded in producing a truly representative selection of the best achievements of the year. It would have been interesting to see some of Eames' work from America, and some of the Italian interiors, which are influencing contemporary designers more than those of any other country. Indeed, possibly the most noticeable fact about this book is that there is hardly any Italian work in it. DENNIS LENNON [*A*]

**An Approach to Design,** by *Norman T. Newton*. 8 in. xi + 144 pp. Cambridge, Mass.: Addison-Wesley Press. 1949 (1951). (83.50.)

This book is based on four years of talks and discussions which were intended to develop a sound attitude to design among first-year students of architecture, landscape and civic planning at the Harvard Graduate School of Design. It will, there-

fore, interest anyone keen to savour the intellectual climate of one of those American schools of architecture that we have come to regard as more glamorous and exciting than our own. Unfortunately, *An Approach to Design* is obscured by a great deal of tiresome jargon, e.g. the good designer must be 'extensionally (as opposed to intensionally) orientated' if he is to achieve his aim of bringing about 'in humans a psycho-somatic balance'!

After one has trudged through this and more like it, one hardly finds that much has been added to those commonly accepted contemporary ideas which have been expressed more vigorously and directly elsewhere. There are no illustrations. G. B. O.

**Gaststätten: Anlage, Bau, Ausstättung,** by *Konrad Gatz* [and others]. 2 vols. 11¾ in. pp. of illus. text illus. Munich: Callwey. 1951. DM.48.

The word 'Gaststätten' means literally 'places for guests' (especially for eating), and so this is a comprehensive work on German restaurants, cafés, bars, beer gardens and dance halls. It is profusely illustrated with good photos and plans, with a description of each example shown. A few examples from other countries are given. A number of hotels are also shown, but only the restaurants, bars and ballrooms—not the hotels as a whole.

The first volume contains parts 1 and 2; part 1 comprises text devoted to the aims and possibilities in planning 'Gaststätten', with an historical sketch, and numerous comparative plans and sketches of all kinds of refreshment rooms, snack bars, and drinking places, including a section on kitchens and store-rooms. Part 2 is a collection of nearly 300 photos and plans, mostly of German examples.

The second volume contains parts 3 and 4, part 3 being a collection of details of doors, windows, canopies, other equipment and furniture, and recommended alphabets. Part 4 consists of working drawings of every possible constructional and decorative element.

For anyone wishing to reproduce, on the stage or in reality, the comfortable but heavy German style as used in 'Gastwirtschaften', 'Schänken', 'Bierstuben' and 'Kneipen', this book will be invaluable!

A. T.

**Industry in Towns,** by *Gordon Logie*. 10 in. 376 pp. incl. pls. + (2) pls., 1 folding text illus. Geo. Allen & Unwin. 1952. £3.

Some years ago the architect's contribution to the design and planning of industrial buildings was either ignored or he was merely called in to 'decorate' a utilitarian building. *Industry in Towns*, by Gordon Logie, an architect, shows the significant change that has occurred in recent years, when architects are producing efficient industrial buildings well adapted to the processes housed and at the same time of good appearance. The author's thorough investigation of industry both at home and abroad has resulted in a comprehensive study of a subject vital to our national survival.

The book is divided into two main parts: the first covers the general picture of the distribution and location of industry, layout, etc., and the second reviews the principal industries individually. This section gives the important characteristics and basic facts of many industries, and the notes, brief as they must be as their range is so wide, are extremely valuable as an introduction to the problem facing the architect in the planning and design of individual factory groups. The author points out that each problem must be exactly analysed and planned, as no two problems are the same—even factories of similar size, producing similar goods, vary considerably owing to varying degrees of mechanisation, different processes, policy, efficiency and many other factors.

For the architect-planner, however, the most difficult problem is to plan for industry in the sense of zoning of land for industrial purposes and the layout of estates. To be efficient, an industrial area must allow of extension, and flexibility is essential. Any attempt to generalise about the amount of land required for a certain factory is not only useless but misleading. Some guidance is needed, none the less, and the author discusses the general background of the distribution of industry, its location, the theory of industrial zoning, transport, human relations and so forth with admirable clarity and with the needs of the planner always in mind. This information is most valuable, and the chapter on industrial density is especially useful. It would have been helpful if the plans of more industrial estates could have been shown; the only one given in detail is that of Team Valley, and many more estates have been planned and built since 1937—and there is no reference to industrial areas of the New Towns.

This book is clearly and efficiently presented, and the illustrations are excellent. A. G. SHEPPARD FIDLER [*F*]

**Climate and Town Districts: Consequences and Demands. Die Neue Stadt,** *&c.*, by *Ernst Egli*. 9¾ in. 156 pp. text illus. Erlenbach-Zürich: Verlag für Architektur. 1951.

This book is refreshing and delightful. But although the subject is profound, in this instance it should not be taken too seriously or there will be disappointment bordering on animosity. Climate is properly shown to be the root of all town development in all parts of the globe, and the theme is sustained with the same determination as that of Henry Thomas Buckle in his *History of Civilisation*.

But Buckle has two advantages over Ernst Egli. His study was sufficiently deep for the reader to examine the deductions for himself in both principle and particular; and it was unfinished. The present author takes us through the most humane scenery and his descriptions leave us with the wind and rain and sun on our faces. But he leads up to and beyond the present age to illustrate conclusions of how we should live, in a way that now seems out of date in present-day thought. The human body related to climate alone is an insufficient basis on which humanity should create its environment. The bees have done this kind of thing before us.

No, the author must give us further studies of other consequences and demands, and this he is surely well fitted to do, for the broad if slight approach to this immense subject, combined with charm of illustration and production, makes this book a welcome addition to the usual library of town planning reports. He is right in his fearless approach to history, but he is wrong to suppose that modern mechanical invention and discoveries are the only factors to take into account. What we all want to know is how to avoid the hive into which we are heading, and to which (except when it is, for instance, a kind of thermos flask in the sub-arctic zone) the author lends his additional driving force. Surely one so sensitive would be the first to protest. G. A. JELLICOE [*F*]

**Soil Mechanics, Foundations, and Earth Structures.** An introduction, *&c.*, by *Gregory P. Tschebotarioff*. (Civil engineering series.) Reprint. 9 in. xx + 655 pp. text illus. New York, Lond.: McGraw-Hill. 1951 (1952). (£2 19*s.* 6*d.*)

This book is written primarily for the civil engineering student, but soil mechanics and foundation engineering are subjects which are and will always remain of more than passing interest to the practising architect.

Soil, in contrast to steel or concrete, is a most variable engineering material, its strength and other structural properties not only changing with its composition and immediate physical nature, but also with time and with the way in which building operations are carried out. Since the early 1920's when Dr. Terzaghi, the pioneer of modern soil mechanics, began his studies on the consolidation of clays under pressure, the science of soil mechanics has continued to grow in stature. Because in practice, however, no single foundation problem is quite like another, the mathematics of soil mechanics can only remain one of the tools of the foundation engineer. To quote Tschebotarioff, 'The scrutiny of all factors affecting a foundation problem is essential and must be followed by an approximate estimation of their combined action on the basis of known facts concerning these factors and by an exercise of sound judgment as to their relative importance. This method involves a strong element of experience and personal skill and therefore of art.' It is because of this that of all branches of engineering I personally find soil mechanics the most interesting, even though much of its mathematical basis is beyond my understanding.

The author is Professor of Civil Engineering, Princeton University, and his work is therefore addressed in the first place to American engineers. It does, however, draw on world-wide experience to illustrate the application of scientific theory to practical problems. This makes the book useful to the architect who,

though much of its contents are probably too specialised, may well find that the chapters on site exploration and foundation design, and particularly that on the selection of a suitable type of foundation, justify its purchase to fill a gap now existing on his reference shelf.

G. ANTHONY ATKINSON [*A*]

**The Age of Wren,** by *Ralph Dutton*. 9¾ in. 136 pp. + pls. text illus. Batsford. 1951. £2 2*s*.

The architecture of the 100 years that began with the accession of Charles II and ended with the death of George II has exercised more pervasive an influence on taste in the two succeeding centuries than that of any other period in English history. Mr. Dutton is justified in characterising the first half of it as the Age of Wren because, even among many fine architects, an unchallenged primacy belongs to one who was intellectually pre-eminent and whose immense output included works of the first magnitude and importance. So far indeed as this nation practises hero-worship among artists, it has made Wren its architectural idol; and the reason may well be that, in his architecture, it recognises something peculiarly acceptable. Always graceful and appropriate, it could be picturesque as in the steeples of the city churches, or magnificent as at Hampton Court and St. Paul's. Endless imagination and ingenuity gave it variety, and a certain streak of amateurishness—judged at least by French standards—saved it from academic dryness. Wren's skill grew progressively with his opportunities; but a fundamentally easy-going temperament is reflected in his approach to different tasks and the care he bestowed on them. Inevitably, with so many works on hand at once, he had to distinguish between problems for which he was content to devise a solution and those on which he expended all his powers. There is, for example, a world of difference in the architectural quality of some of his churches, which he designed with adroitness rather than complete success, and St. Paul's, where every detail was studied with patience and skill.

Yet even in St. Paul's there are things that, according to the strict canons of classical design, seem curiously wayward; and it is a somewhat similar disregard for architectural punctilio that manifests itself in much of the work of Wren's contemporaries. To some minds that is its defect: to others it may appear the secret of its charm. Few productions of this gifted age fail to please: few quite achieve the perfection of faultless works of art.

This book, well written and illustrated, gives a balanced account of the leading architects in London and the provinces, and serves a useful purpose in enabling comparison to be made between the buildings of skilled professionals such as Hawksmoor and Gibbs and lesser men whose names have never become famous. Not the least interesting fact which it brings to light is the number of houses, prodigious in size and lavishly decorated, that either fell down or were burnt, and of which all trace has now vanished. We may ponder on what treasures of fine architecture, decoration and craftsmanship perished in their demise: and wonder the more that our own age should condone yet further beauty, in old houses, gardens and parks, being destroyed and ravaged before its very eyes.

S. E. DYKES BOWER [*F*]

**Mediaeval Sherborne,** *&c.*, by *Joseph Fowler*. 9¾ in. (xix) + 410 + xvi pp. + 35 pls. Dorchester: Longmans. 1951. £1 10*s*.

Although only marginally concerned with architecture, Mr. Fowler's book contains much of architectural interest and possesses a quiet beauty, the outcome of its author's love of research. He describes in the introduction the reward of the student faced with 'the discovery of truth. At the moment of such discovery, there comes to the researcher an elation and satisfaction of a kind indescribable in ordinary terms. It is the poetry of History, and one of the purest and least transitory of life's experiences'. Mr. Fowler combines this poetic approach with the scientific vision of the geologist, and the result is a most valuable study of the relation between a certain environment and its human inhabitants, from the time of Saxon settlement until the end of the 16th century.

Sherborne is a town of outstanding interest for many reasons. It was the seat of a major Saxon bishopric and its later abbots had the almost unique distinction of being monastic members of a secular Chapter, at Salisbury. Until 1539 the abbots and the bishops of Salisbury between them had almost absolute jurisdiction over the town and neighbourhood, and it was only towards the end of the Middle Ages that the germ of local self-government appeared, in the surprising shape of almshouse trustees. Mr. Fowler shows how these men, after the Dissolution, were appointed governors of the new grammar school, and how they also managed the town funds. The almshouse itself, built in 1439–43, is an interesting building, contemporary with the great Abbey choir, which has with justice been called 'the most perfect piece of Perpendicular work in existence'. Sherborne is indeed an important architectural centre, a link between the schools of Bristol and Winchester.

The legend that the Pack Monday Fair commemorates the completion of the Abbey church is gracefully exploded, but Mr. Fowler finds in St. Catherine's Chapel the 'lost' building of Canon John Doggett, of c. 1500. He has also identified the builders of the school dining hall of 1606–07: Roger Brymesmeade, mason, and John Reape, carpenter; while its display of heraldry was carved by Robert Moore, freemason, perhaps himself the architect. Among many evidences of continuity are: the site of the vicarage on that of the Saxon bishop's 'palace'; laying out a housing estate in 1227; the theft of lead from Sherborne Castle in 1274; thatching rods cut from the same wood for six centuries; 16th-century price controls; and the use of the almshouse coffer of 1437 to safeguard the Abbey muniments in 1939–45. Finally, Mr. Fowler tells of Sir Walter Raleigh's acquisition, and loss, of the Sherborne Castle estate; Lady Raleigh's mention of the children's sea-bathing at Weymouth in 1600 deserves to be better known.

JOHN H. HARVEY

**Old Towns Revisited.** Edited and with introd. by *Arthur Oswald*. [Articles by A. Oswald and others.] 9¾ in. 192 pp. incl. front. and pp. illus. Country Life, 1952. £1 1*s*.

In its issue of 6 March 1942 COUNTRY LIFE started an attractive and useful series of articles, 'Old Towns Revisited', beginning with Lyme Regis. Attention was thus focused on some little known and less-surveyed gems, most of which had so far escaped the Monuments Commission's and Victoria County History's careful but long-protracted studies. Over a score of the articles have already appeared.

Eight of these picturesque towns have now been chosen and their articles gathered up to form a well-illustrated volume. They are drawn from nearly every region of England—Farnham (Surrey) and Abingdon (Berks) in the south-east, Blandford (Dorset) and Totnes (Devon) in the south-west; Bewdley (Worcs) in the western midlands, and Wisbech (Cambs) in the eastern; and finally Richmond (Yorks) and even Berwick-on-Tweed in the far north. John Fleming has written one article, Christopher Hussey two, and the rest are by Mr. Oswald himself.

Apart from the facts that one does not always know, as one opens the book, what town is under review (names of towns in the running titles appear only on the right-hand text pages), and that the whole is printed on perilous coated paper, the book is a useful contribution to the astonishingly scanty literature of our English towns, and one hopes more of such collected studies will follow.

H. V. M. R.

**Manual of Building Science,** by *John F. Douglas* and *Lintott Kent*. 9 in. xiv + 221 pp. text diag. Pitman. 1949. 18*s*.

This is a useful book for building students at about R.I.B.A. Intermediate standard. It gives an account of: the properties of matter; design of trusses and simply supported beams; elementary dynamical principles; elements of heat, light and sound. It has a good index and answers are given to exercises set at the ends of chapters.

The illustrations of world-famous buildings in the introduction are so poor, however, that the mere sight of them might prevent some students from considering the book. In the chapter on stress and strain, stress is defined as an 'internal force' and unit stress is given in place of the usual definition of stress. The force diagrams are in consequence called 'stress diagrams'. Definitions of this kind are troublesome to some.

Page 114 gives the method of finding the maximum bending moment and indicates that it is at a point of zero shear for uniform loads and at a point where the shear changes sign for point loads. Surely the simple state-

ment which is always correct, even for a cantilever, is that a maximum bending moment occurs at a point where the shear changes sign.

It is a good thing to mention the existence of the statically indeterminate structure. But the old and established word in engineering, a 'redundant' member, is totally misleading to building students and to some engineers, who may be tempted to think that there is something unwanted about such a member.

J. C. DE C. HENDERSON [*A*]

**Saxon Architecture and Sculpture in Hampshire,** by *Arthur R. Green* and *Phyllis M. Green*. 8¾ in. viii + 67 pp. + xx pls. text diags. Winchester: Warren. 1951. 3*s.* 6*d.*

This unassuming book brings together up-to-date information on the early architecture of a county peculiarly rich in pre-Conquest survivals. Precisely documented and well indexed, it also contains a useful bibliography and a great many photographs, as well as diagrams in the text.

**Reinforced Concrete,** by *Oscar Faber*. (Spon's Architectural and building series.) 8½ in. 232 pp. + pls. text illus. Spon. 1952. £1 10*s.*

In the preface the author points out that, had he realised how arduous the task of writing this book would prove, it is fairly certain it would never have been written. Yet the result must give him satisfaction because, thanks to his clarity of mind and wide experience in almost every type of reinforced concrete work, he has given architects and engineers, and those studying for these professions, a book enriched with knowledge that is up to date and closely related to all current Codes of Practice. It is divided into 17 comprehensive chapters dealing with general properties and uses of concrete—development from plain to reinforced and prestressed concrete—materials and properties—proportioning—strengths—shrinkage—plasticity—elements of design—piling—silos—bunkers—shell concrete—reservoirs and water retaining structures—chimneys—in situ and factory-made concrete—prestressed concrete.

In all these chapters, the subject-matter is carefully examined and the examples worked are typical of general constructional problems in the average type of building. The 52 illustrations and 30 tables are neat and explicit.

The use of shell and prestressed concrete offers great opportunities to design buildings in thin proportions, and the author's explanatory data in these chapters will be found absorbing. Both of these chapters could be expanded with close-up photographs of construction in progress, particularly with prestressed concrete.

No mention is made of retaining walls, the protective measures necessary when sulphates exist in the soil or underground water, the types of formwork and the age for striking, and the general waterproofing of concrete. Perhaps in a revision of the book we shall see these items included at the expense of so many pages devoted to manufacturers' advertisements.

F. L. FELGATE [*A*]

**The Principles and Practice of Prestressed Concrete,** by *P. W. Abeles*. 2nd ed. Vol. i. 9¾ in. xii + 116 pp. + insert. Lond.: Crosby Lockwood. 1952. £1 1*s.*

The three years that have elapsed since the invaluable textbook of Dr. Abeles appeared in its original form have seen a number of developments in the important and still new material of prestressed concrete. In the second edition it has been necessary, for example, to provide particulars of the 'First Report on Prestressed Concrete' prepared by a committee of the Institution of Structural Engineers, and to refer to the latest German draft regulations. Other amendments, adjustments and minor corrections have been made to the original text. The book will now be known as *Volume One*, since a further volume will be published shortly embodying the results of yet more recent research. J. C. P.

**A Complete Guide to the Building (Safety, Health and Welfare) Regulations,** *&c. Royal Society for the Prevention of Accidents.* 9¾ in. 104 pp. Lond. 1951. 15*s.*

The value of this ready reference book to all concerned with building construction is obvious.

**Modern Cabinet Work, Furniture and Fittings,** by *John Hooper*. 6th ed. 9¾ in. xvi + 378 pp. incl. pls. + front. + lxxxii pls. text illus. Batsford. 1952. £2 10*s.*

This well-known work has passed through five editions and several reprints since it first appeared in 1909. Out of print since the end of the war, it is now reissued in enlarged, rewritten and re-illustrated form. It does not claim to be a treatise on furniture design, but is intended to elucidate the processes of practical cabinet-making and technical drawing for students, craftsmen and teachers of woodwork.

**Bauhaus 1919–1928,** ed. by *Herbert Bayer, Walter and Ise Gropius*. Reprint. 10 in. 223 pp. incl. pls. text illus. Boston: Branford. 1938. (1952). (£2 4*s.*)

This is a reprint of an elegant book, originally published in 1938 in connection with an exhibition held at the Museum of Modern Art in New York. It is largely a collection of photographs, articles and notes reflecting the multifarious activities of that celebrated institution, the Bauhaus, during the period when Walter Gropius was its director, first at Weimar and later at Dessau. Some biographical and bibliographical information has been added. J. C. P.

# Correspondence

## THE R.I.B.A. CRICKET CLUB

SIR,—A few weeks ago I had the honour of being made the first President of the R.I.B.A. Cricket Club. Owing to a war disability I have been unable to play cricket since 1914 but have lost none of my love for the game since I left the county of my birth and of Grace, Jessop and Hammond.

At the annual dinner I made one or two remarks about the club and the impossibility in my view of their running it and remaining solvent without some patronage in the way of Vice-Presidents who would contribute as much as they could afford to the funds. Last year, I understand, there was a balance of 2*s.* 4*d.*—and I think that was on the wrong side!

I don't know the exact price of cricket equipment now, but one of my partners who keeps wicket for the club had to spend about £9 on a bat, pads and wicket-keeping gloves. The average cost to the players of each match is about a pound which, in addition to losing a day's work and possibly a day's pay, the younger ones can ill afford, and it is those who are still capable of bending who should be encouraged to play.

If this suggestion appeals to any members of the Institute I should be very happy to hear from them direct or through the Secretary of the Club. I believe that if we get the financial support, the playing support will follow automatically, but at the present time the team is apt to consist of about equal percentages of players and passengers.

Yours faithfully,

C. H. JAMES [*F*]

## TOWN AND COUNTRY PLANNING

*Editor's note: The following letters, which had to be omitted from the December* JOURNAL *for reasons of space, refer to the article 'Town and Country Planning: an End or a Means to an End', by Dr. Ronald Bradbury [F], published in the October* JOURNAL, *and, in the case of the letter from Mr. Peter Warren [L], to the letter from Mr. R. P. Shannon [A] published in the November* JOURNAL.

SIR,—I would have thought that the title of Dr. Bradbury's recent article should have been 'The Doctor's Dilemma' rather than 'Town and Country Planning: an End or a Means to an End'. Dr. Bradbury, my one-time tutor and employer, I hope will not take offence at my saying this, but even if he does I am bound to say that his article reveals, possibly unintentionally, a soul tormented and confused.

Much of what Dr. Bradbury writes is true, but unfortunately much more of it is far from being so. To sort the truth from the untruth would be a laborious and time-taking task, and would necessitate an article of much greater length than his own. If Dr. Bradbury's article had not appeared in the JOURNAL for October 1952, quite honestly I would have thought it had been written at least six years ago for a post-war summer school.

The article is a very important one because, if what the Doctor says is true, then it is a tragedy for all who are connected with planning; but if what he says and implies is not true, which I believe is the case, then it is a tragedy that Dr. Bradbury should have chosen to leave for posterity a statement which can only confuse, particularly in respect of time, the future archivist and historian, whilst

contributing nothing to present-day thought and knowledge. It would seem incumbent upon somebody of standing to give a detailed answer to Dr. Bradbury, if only to keep the records in order. For myself, I can only record that practically everything that Dr. Bradbury says should be done has, in fact, for a long time been done, and those things he says should not be done, have now not been done for many years.

Dr. Bradbury asks 'Dare we suggest then that a new spirit is needed in Town and Country Planning?' Of course we dare, and it will be so, for after all we are the new Elizabethan adventurers. But alas; the Armada Dr. Bradbury is so worried about was disposed of long since, unfortunately not in the manner of Drake, but by being scuttled by its own crew.

Yours faithfully,

F. WOODHOUSE BICKERTON [*A*]

SIR,—It is desirable that every now and again a planner, and indeed the public too, should take stock of the position to see what progress has been made, whether there has been success or failure, whether there is hope or frustration, and whether the planner and the public are in agreement or not.

There is no doubt in my own mind that there has been, particularly during the last twelve months, a slight swing back of the pendulum, and there has been, and still exists, a feeling amongst the general public that planning is restrictive and 'up-in-the-air'. There is undoubtedly a stigma attached to the word 'planning' which has been fostered very carefully for certain political ends in spite of the fact that some form of planning is an essential part of our civilisation. It would even be right to say that its continued existence, the conservation of our wealth and its increase, is wholly dependent on careful and effective planning. This is particularly true in view of our present economic situation.

It must be admitted that the general public do think that planning is 'restrictive'. This attitude has arisen primarily because the development charge and its underlying principles were not understood by the public, and because undue prominence has been given in the Press to applications for development which have been turned down by the Local Planning Authority while the tremendous amount of positive help so often given receives hardly a mention.

These misconceptions could largely be dispersed by a good information service at central and local government levels. Such a service in my opinion is an absolute necessity, but it is unfortunately true that few authorities have seen fit to establish one.

In spite of the small recession in the public attitude towards planning, if this is related to the tremendous progress that has been made in the conception of planning since 1939 then I think it right to say that 'the slight swing' is infinitesimal when compared with such progress.

In the broadest sense we are all makers of the environment, and for good or for evil we are all planners. The butcher, the baker, the candlestick maker are all providing the necessary creative forces which if encouraged and guided into the right channels result in the creation of buildings and roads and so on. The professional planner by his very training ought to be, on behalf of the public, an interpreter and co-ordinator of the vast number of aspects which must be considered if planning is to be progressive and creative.

The real basis of planning as I see it is to satisfy the needs and desires of people, either as individuals, families or communities, as efficiently as possible. Economics decide how much can be satisfied and when. The real basis of planning is not in the first place the study of communications, public utilities, population densities, etc., but the study of people. This is where planning goes wrong: it needs humanising by a wider and deeper study of people themselves, after which the socio-economic setting can be considered more humanely.

The complexity of life has necessitated specialisation which, although necessary, has resulted in a certain narrowness of vision and unawareness of the complete whole. Herein lie greater potentialities but greater danger. Planning today embraces the work of the planner, the architect, the surveyor, the engineer, the geographer, the sociologist, the economist, and so on. Each tends to look at life and planning through his own spectacles, and very often the relationship to the whole is not appreciated. Few seem to appreciate the wholeness of planning and the meaning of development plans. The seeing of an exaggerated image from a narrow viewpoint is one of the main faults within and outside the profession. Better and wider education together with greater experience will in time ameliorate this problem.

Finally, it is not necessarily right to belittle the 'planners' jargon'. After all it is merely the means of expressing a very technical subject concisely. The scientist and the biologist and others each have their own technical language. Why not the planner? In speaking to the layman, however, it is right to translate this language into that in everyday use, and quite often, it is admitted, this is not done or appreciated that it should be done.

Yours faithfully,

W. S. BUTLER [*A*]

SIR,—The recent correspondence on this subject has done the valuable service of stressing, both wittingly and unwittingly, the danger to the normal evolution of architecture as a living art of Section 13(3)(*a*) of the Town and Country Planning Act, 1947, which empowers local planning authorities to attach as a condition to the issue of a development order for the 'erection, extension or alteration of any building' their approval of the 'design or external appearance thereof'. In effect this provision empowers the architectural adviser of a county or county borough to exercise a statutory censorship, subject only to appeal to the Minister, upon the work of his colleagues and to impose his own views and standards upon all building within the area of the authority he serves. The consideration that, for a conscientious architect, this must be a most invidious duty which he will perform as tactfully and courteously as he may, does not alter the fact that his intervention is, of its nature, officious and disputable. Questions of taste are axiomatically subjective and controversial. The opinions of architects and lovers of architecture, though of equal title to respect, are notoriously and properly divergent. Disagreement, even passionate disagreement, among artists about their art is an essential factor to its healthy development. Admittedly such divergences of thought are mystifying to the public while the tendency to the esoteric is not helpful. But the law, in performing an undoubted duty to the public in defending it even against itself, should not trespass into fields which are beyond its competence.

Mr. Shannon begins by postulating a standard of public taste to be preserved against the preferences of a mere Tom, Dick or Harry. He ends by speculating upon the advantage to the great architects of the past of the 'authoritative co-operation which we enjoy'. The first observation might be dismissed as a contradiction in terms, the concluding apostrophe as presumptuous. But simply to do so would be to disregard the insidious nature of an alliance of the notion of public taste with the notion of authority, the suggestion that it is acceptable for a minority of architects, armed with statutory powers, to arbitrate upon questions of taste in building for the majority of their colleagues and the whole of the community. Certainly the face of the land has been cruelly disfigured, not only by a negative and spendthrift commercialism, but by the positive pursuit of vulgarity. The almost complete extinction of a spontaneous and honourable popular art is a loss which must be accepted. We are left with a problem of integration; to educate the public up to a degree of sophistication sufficient to embrace an awareness of architectural values, to humanise the asperities of the architectural idiom sufficiently to favour that awareness. If the Town and Country Planning Act is to be used as an instrument of education, it may serve a constructive purpose. If, on the other hand, it is to be used to enforce an arbitrary standard of taste, it will touch the symptoms merely, not the disease, and do so at the expense of natural discrimination and architectural integrity. That is a policy of defeatism. The quality of greatness connotes spontaneity and independence. It does not tolerate authority, academic or legal, in matters of the mind. A society which fails to accept that truth, a truth which it is not called upon to understand, will forfeit the title not only to great achievement, but to genuine achievement at any level.

Yours faithfully,

PETER WARREN [*L*]

# Notes and Notices

## NOTICES

**The Fifth General Meeting, Tuesday 3 February 1953 at 6 p.m.** The Fifth General Meeting of the Session 1952–53 will be held on Tuesday 3 February 1953 at 6 p.m. for the following purposes:

To read the minutes of the Fourth General Meeting held on 6 January 1953.

The President, Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., to deliver an address to architectural students and present the Medals and Prizes 1953.

Mr. Howard V. Lobb, C.B.E. [*F*], to read a criticism of the designs and drawings submitted for the Prizes and Studentships 1953.

(Light refreshments will be provided before the meeting.)

### Minutes III. Session 1952–1953

At the Third General Meeting of the Session 1952–1953, held on Tuesday 9 December 1952 at 6 p.m., Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President, in the Chair.

The meeting was attended by about 450 members and guests.

The Minutes of the Second General Meeting held on Wednesday 12 November 1952 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:—

AS FELLOWS

T. Brown, D. S. Taylor.

AS ASSOCIATES

Miss Sheila Belton, D. H. P. Clarke, K. D. Coles, S. F. DeAth, L. Eckersall, J. W. Fraser, J. Hanson, C. Holt, Miss Mary M. Hoult, H. J. Lasham, A. Lindsay, H. A. C. Masters, E. F. Oliver, D. C. Packer, S. F. Peck, J. L. Pope, S. B. Shiber.

AS LICENTIATES

V. Helbing, T. Jarratt.

Professor Rudolf Wittkower having read a Paper on 'Inigo Jones: Architect and Man of Letters', a discussion ensued and on the motion of Professor Geoffrey F. Webb, M.A. [*Hon.A*], seconded by Mr. John Summerson, C.B.E., B.A.(Arch.), F.S.A. [*A*], Curator of Sir John Soane's Museum, a vote of thanks was passed to Professor Wittkower by acclamation and was briefly responded to.

The proceedings closed at 8.0 p.m.

### Minutes IV. Session 1952–53

At the Fourth General Meeting of the Session 1952–53, held on Tuesday 6 January 1953 at 6 p.m.

Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President, in the Chair.

The meeting was attended by about 420 members and guests.

The Minutes of the Third General Meeting held on Tuesday 9 December 1952 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President:

AS FELLOWS

W. H. Evans.
F. W. Holder.
S. J. Lloyd.
J. Edward Tyrrell.
C. E. Westmoreland.
N. C. Westwood.

AS ASSOCIATES

R. C. Allen.
A. N. Anderson.
M. J. S. Andrews.
H. C. Astbury.
G. F. Bailey.
P. D. Blair.
A. S. Burn Hill.
G. B. Costin.
S. H. Dickinson.
D. T. F. Falkus.
H. G. Foster.
M. C. Froud.
G. A. Goulty.
P. R. C. Gowings.
D. T. Hall.
R. T. M. Ham.
F. E. Harvey.
Rudolf Herz.
F. A. P. Hicks.
A. J. Holtum.
Noel Horton.
P. L. Howells.
C. W. Jackson.
G. W. Judd.
J. M. Keable.
G. Lavington.
L. J. Laws.
M. J. Litchfield.
G. D. Lodge.
F. K. Lord.
A. M. Mennim.
R. A. Meredith.
J. H. Mitchell.
A. S. B. New.
D. B. Nicholson.
Mrs. S. C. Nicholson.
C. E. I. Nops.
A. M. Priestman.
John Russell.
G. P. Ryland.
C. P. Sainsbury.
F. A. Sargeant.
D. E. Saundery.
A. A. S. Sharp.
T. H. Sherlock.
F. C. Smith.
C. Tucker.
D. B. Waterhouse.
E. M. Westaway.
E. F. Whitehead.

AS LICENTIATES

S. F. Gibbs.
B. R. Pike.
F. C. Strahan.

The Secretary read the Deed of Award of Prizes and Studentships made by the Council under the Common Seal.

Mr. Peter F. Shepheard, B.Arch., A.M.T.P.I. [*A*], having read a Paper on 'Landscape and Architecture' a discussion ensued, and on the motion of Mr. G. A. Jellicoe, M.T.P.I. [*F*], seconded by Dr. W. F. Fox, F.R.C.P., V.M.H., Hon. Secretary of the Roads Beautifying Association, a vote of thanks was passed to Mr. Shepheard by acclamation and was briefly responded to.

The proceedings closed at 7.55 p.m.

**British Architects' Conference 10 to 13 June 1953. Hotel accommodation provisionally booked**

| HOTELS (Addresses are in Folkestone) | ROOMS | | | TARIFF | |
|---|---|---|---|---|---|
| | With Double Beds | With Twin Beds | With Single Beds | Bed and Breakfast per person | Bed, Breakfast and Dinner per person |
| Grand Hotel, The Leas | 13 | 14 | 35 | From 22/– to 27/–* | From 32/6 to 37/6* |
| with Private Bathroom | 2 | 26 | 2 | From 27/– to 32/–* | From 37/6 to 42/6* |
| Majestic Hotel, Sandgate Road | 10 | 12 | 8 | 25/– | 35/– |
| Salisbury Hotel, The Leas | 10 | 10 | 10 | 25/– | 32/6* |
| Princes Hotel, Bouverie Road West | 8 | 10 | 6 | 25/– | 31/6 |
| Clifton Hotel, The Leas | — | 10 | — | 25/– | 31/– |
| Queens Hotel, Sandgate Road (*a*) | 20 | — | 10 | 20/– | — |
| Greenwold Hotel, Clifton Gardens | — | 4 | 2 | 17/6 | 25/– |
| Highcliffe Hotel, Clifton Gardens | 5 | 5 | 3 | 17/6 | 23/6 |
| Rasfacet Private Guest House, Bouverie Road West | 4 | 3 | 3 | 12/6 | 15/– |
| Imperial Hotel, Hythe (*b*) | — | 16 | 8 | 25/– | 31/6 |

* Plus 10 per cent Surcharge

These hotels are estimated as being within five minutes' walking distance of the Conference Headquarters, with the exception of (*a*) which is approximately ten minutes' walking distance from the Headquarters and (*b*) which is four miles from Folkestone.

In addition to the above, complete lists of other hotels, boarding houses, etc., may be obtained from the Folkestone, Hythe and District Hotel and Catering Association, 5, Leas Pavilion, The Leas, Folkestone, and the Information Bureau, The Leas, Folkestone.

**British Architects' Conference Canterbury and Folkestone 10–13 June 1953.** The British Architects' Conference in 1953 will be held at Canterbury and Folkestone from 10 to 13 June at the invitation of the South-Eastern Society of Architects, who will be celebrating their Silver Jubilee. An attractive programme is being prepared.

The Conference Headquarters will be in Folkestone and members are advised to reserve hotel accommodation in Folkestone at the earliest possible moment. Transport will be provided for functions taking place at Canterbury. A list of hotels prepared by the Conference Executive Committee is given below. The accommodation shown has been provisionally reserved until 28 February, and members are advised to make their reservations well before that date.

### Annual Subscriptions and Contributions

Members' subscriptions and Students' contributions for 1953 became due on 1 January.

The amounts are as follows:

| | £ | s. | d. |
|---|---|---|---|
| Fellows | 7 | 7 | 0 |
| Associates | 4 | 4 | 0 |
| Licentiates | 4 | 4 | 0 |
| Students | 1 | 11 | 6 |

For members resident in the trans-oceanic Dominions who are members of Allied Societies in those Dominions, and for members resident overseas in areas where no Allied Society is available, the amounts are as follows:

| | £ | s. | d. |
|---|---|---|---|
| Fellows | 4 | 4 | 0 |
| Associates | 3 | 3 | 0 |
| Licentiates | 3 | 3 | 0 |

**Composition of Subscriptions for Life Membership.** Fellows, Associates and Licentiates of the R.I.B.A. may become life members by compounding their respective annual subscriptions. Full details may be obtained on application to the Secretary, R.I.B.A.

**R.I.B.A. Distinction in Town Planning.** The R.I.B.A. Distinction in Town Planning is by conferment only, and is limited to Fellows, Associates and Licentiates of the R.I.B.A.

The Distinction is the highest award in Town and Country Planning that the R.I.B.A. can bestow. It is solely intended for members of the R.I.B.A. who have made an outstanding contribution in the field of large-scale planning. Recommendations are submitted to the Council by a Standing Committee set up for the purpose.

Personal applications by candidates will not be entertained: the name of a candidate must be submitted by three sponsors, themselves members of the R.I.B.A., who will be required to submit the following particulars on behalf of the candidate:

(*a*) Details of professional qualifications and experience;

(*b*) Evidence of his work and experience, such evidence consisting of a list of the candidate's work, together with references to professional journals in which the works have been illustrated; and such other evidence as may assist the Committee in making their recommendation to the Council.

Nominations may be made twice a year

on 1 March and 1 November, and should be addressed to the Secretary, Royal Institute of British Architects, 66 Portland Place, London, W.1.

Members upon whom the Distinction has been conferred will be entitled to use the designation 'R.I.B.A. Distinction in Town Planning', and it is advised that this should be used in full, or the initials 'R.I.B.A. Dist.T.P.' after the initials F.R.I.B.A., A.R.I.B.A. or L.R.I.B.A., according to the class of membership to which they belong.

**Cessation of Membership.** Under the provisions of Bye-law 21 the following has ceased to be a member of the Royal Institute:
*As Associate*, Michael Calvert Sunter.

**Election Void.** Under the provisions of Bye-law 17, the election as Associate of the following has been declared void: James Leon Toomey.

## BOARD OF ARCHITECTURAL EDUCATION

**Exhibition of Prize Drawings 7 January to 3 February 1953.** The Exhibition of designs and drawings submitted for the Prizes and Studentships 1953 will remain open until Tuesday, 3 February 1953 between the hours of 10 a.m. and 7 p.m. (Saturdays 10 a.m. to 5 p.m.).

**Building Surveying Examination.** The R.I.B.A. Examination qualifying for candidature as Building Surveyor under local authorities will be held at the R.I.B.A. on 22, 23 and 24 April 1953.

Applications for admission to the examination must be made not later than 26 February on the prescribed form to be obtained from the Secretary, R.I.B.A.

## ALLIED SOCIETIES

**Devon and Cornwall Society of Architects. Annual Dinner.** The annual dinner of the Devon and Cornwall Society of Architects was held at the Continental Hotel, Plymouth, on Friday 28 November. Among the guests were Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President of the R.I.B.A., together with Mrs. Robertson, Alderman G. J. Wingett, J.P., Deputy Lord Mayor of Plymouth, and Sir Clifford Tozer, Chairman of the Reconstruction Committee. In all the attendance was about 120.

The Deputy Lord Mayor of Plymouth proposed the toast of 'The R.I.B.A.' and the President R.I.B.A. responded. The President said he would like to suggest, quite unofficially, that Plymouth should build a theatre and that architects in Devon and Cornwall should compete in the design of it.

Mr. L. F. Vanstone [*L*], President of the Society, was presented with a suitably inscribed silver salver in appreciation of his work for the Society.

The dinner was followed by a ball.

**Devon and Cornwall Society of Architects.** The title of the former Devon and Cornwall Architectural Society has been changed to the Devon and Cornwall Society of Architects.

**Changes of Officers and Addresses**

*Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects: Bedfordshire Branch.* Hon. Secretary, A. R. Laing [*A*], 9 St. Paul's Square, Bedford.

*Oxfordshire Society of Architects.* Hon. Secretary, E. R. Chilton [*F*], County Planning Dept., Oxfordshire County Council, Park End Street Offices, Oxford.

*Royal Australian Institute of Architects.* President, Robert S. Demaine [*F*], Vice-President, E. J. A. Weller [*F*]; Hon. Secretary, W. P. Race Godfrey [*F*].

**Summer School in Measured Drawing and Architectural History, Oxford 1953.** The Council of the Berks, Bucks & Oxon Architectural Association, following the successful summer school of 1951, have decided to hold another school during the last two weeks of July 1953. Residence, as in 1951, will be at Magdalen College by kind permission of the President.

In addition to the normal measuring work, arrangements will be made for students who may wish to embark upon a specialised study of form and construction, entailing the preparation of measured sketches and of some finished drawings of such features as doorways, wrought ironwork, etc. Lectures will be given during the evenings and it is hoped to arrange two tours of architectural interest.

Further details, when completed, together with application forms, will be forwarded on request by either of the joint Hon. Secretaries who are: E. Lassetter [*L*], Somerset House, Reading (Reading 60076), and J. Brosgall, Secretary, The Southern Regional Council for Further Education, Shire Hall, Reading (Reading 2120).

**The Tees-Side Branch of the Northern Architectural Association.** A pleasant and enjoyable Christmas party was held in Stockton-on-Tees by the Tees-Side Branch of the Northern Architectural Association. The guest of honour was Mr. C. A. Harding [*F*], President of the Northern Architectural Association. At the request of the Chairman, Mr. R. W. Robson [*L*] of Bishop Auckland, a collection was taken in aid of the Christmas Fund of the Architects' Benevolent Society, which amounted to £2 15s.

## COMPETITION

**Hospital at Doha, Persian Gulf**

The Government of Qatar, Persian Gulf, invite architects to submit designs for a 100 bed hospital, complete with staff quarters, at Doha.

Assessor: Mr. Alexander S. Gray [*F*], of Messrs. W. H. Watkins, Gray & Partners.

Premiums: £1,250, £1,000, £750.

Last day for submitting designs: 15 August 1953.

Last day for questions: 31 March 1953.

Conditions may be obtained on application to: Captain J. E. Stone, C.B.E., M.C., F.S.A.A., Hon. Secretary and Treasurer, International Hospitals Federation, 10 Old Jewry, E.C.2.

Envelopes to be marked 'Doha Competition'.

Conditions will not be available until after the 30th January. Deposit: 3 guineas.

**R.I.B.A. Cricket Club.** The Annual Dinner and General Meeting of the R.I.B.A. Cricket Club were held on Friday 28 November 1952 at the 'Marquis of Granby', Shaftesbury Avenue. Twenty-three members and guests attended.

Mr. C. H. James, R.A. [*F*] was elected as the first President of the club and it was decided that in view of the number of members, the club should now be properly constituted.

Fixtures for next season have been arranged with the Vitruvians, the London Master Builders' Association, the Architectural Association, the Blue Circle Cricket Club, the Royal Institution of Chartered Surveyors and the Club Cricket Conference.

Election of officers for the 1953 season resulted as follows:—*President:* Mr. C. H. James, R.A. [*F*]. *Captain:* C. A. R. Norton [*A*]. *Vice-Captain:* B. S. Smyth [*A*]. *Committee:* D. S. Taylor [*F*], R. R. Fairbairn [*A*], F. G. Cooper [*A*]. (President, Captain and Vice-Captain are *ex officio* members.) Mr. John Kemp [*A*] has been appointed scorer.

A vote of thanks to D. S. Taylor (retiring Captain) was passed unanimously for his enthusiastic and able services in the organising and captaincy of the club since its inception.

All correspondence in connection with the club should be addressed to B. S. Smyth [*A*], Hon. Secretary, 'Staunton', The Drive, Chorleywood, Herts. (LONdon Wall 2917 or Rickmansworth 2578.)

# Notes from the Minutes of the Council

**MEETING HELD 9 DECEMBER 1952**

**Address by the Minister of Housing and Local Government.** Before the Council proceeded to the business of the meeting, a short and informal talk was given by the Right Hon. Harold Macmillan, M.P., Minister of Housing and Local Government, on the work of his Ministry. The President, on behalf of the Council, expressed his appreciation of the Minister's visit and the talk he had given.

**King George VI Memorial Fund.** The Council sent a donation, on behalf of the Royal Institute, of 250 guineas to the King George VI Memorial Fund to be used as a contribution towards the cost of the architectural work involved in the provision of a permanent memorial.

**Appointments.** (A) *Ministry of Works Advisory Council on Building Research and Development: R.I.B.A. Representatives:*

The following have been appointed by the Minister of Works on the nomination of the Royal Institute:

Sir Lancelot Keay, K.B.E., and Mr. Michael Waterhouse, M.C., Past Presidents; Mr. Robert H. Matthew, C.B.E. [*A*].

(B) *R.I.B.A. Architecture Bronze Medal: The Devon and Cornwall Society of Architects: Appointment of R.I.B.A. Representative on Jury:* Mr. R. H. Brentnall, M.B.E. [*A*], President of the Bristol and Somerset Society of Architects.

(C) *Code of Practice for Installation of Butane-burning Gas Appliances: R.I.B.A. Representative on Drafting Committee:* Mr. George Fairweather [*F*].

**Direct Election to the Fellowship.** On the recommendation of the Royal Australian Institute of Architects the following Past Presidents of the Western Australian Chapter, R.A.I.A., were elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4: Alexander Donald Cameron, Albert Earnest Clare, Kenneth Charles Duncan, Edgar Le Blond Henderson, Reginald Summerhayes, Alexander Barr Winning [*L*].

**Birthday Honours.** The Council noted with pleasure the award of the C.M.G. to Mr. Leighton Irwin [*F*] (Australia) and by a unanimous resolution a cordial vote of congratulations was conveyed to him.

**R.I.B.A. Standard Form of Contract: Endorsement by the Royal Institution of Chartered Surveyors.** The Secretary reported that the Royal Institution of Chartered Surveyors had accepted with pleasure the invitation jointly

issued by the Royal Institute and the National Federation of Building Trades Employers to add their endorsement to the R.I.B.A. Standard Form of Contract.

**Change of Title: The Devon and Cornwall Architectural Society.** Formal approval was given to amendments to the rules of the Devon and Cornwall Architectural Society involving, *inter alia*, the change of title of the Society to 'The Devon and Cornwall Society of Architects.'

**Revision of Rules.** Formal approval was given to a revision of the rules of the Association submitted by the Norfolk and Norwich Association of Architects.

**Overseas Students: Contributions.** The Council approved a recommendation of the Finance and House Committee that as from 1 January 1953 any overseas Student newly enrolling should be required to pay the normal annual contribution of £1 11*s.* 6*d.* The concession previously in effect remitting this contribution to overseas Students for the first five years of their Studentship will not be withdrawn from those already receiving the concession.

**Membership.** The following members were elected: as Honorary Corresponding Members—2; as Fellows—32; as Associates—337; as Licentiates—9.

**Students.** 148 Probationers were elected as Students.

**Applications for Election.** Applications for election were approved as follows: *Election* 6 *January* 1953: as Fellows—8; as Associates—358; as Licentiates—5. *Election* 31 *March* 1953 (*Overseas Candidates*): as Fellows—2; as Associates—15.

**Applications for Reinstatement.** The following applications were approved: As Associates: Cyril Percy Griggs, Richard Robert Crosby Halahan. As Licentiate: John Francis Sargent.

**Resignations.** The following resignations were accepted with regret: Robert George Maxwell MacGoun [*A*], John Charles Mackenzie [*A*], Keith Robert Basil McKnight [*A*], Mrs. Marie Paulin Moss [*A*], Robert Henry Glegg [*L*].

**Application for Transfer to Retired Members' Class under Bye-law 15.** The following application was approved: as Retired Licentiate: Charles Burton Maltby.

**Obituary.** The Secretary reported with regret the death of the following members: Sir Charles, Reed Peers, C.B.E., F.B.A., M.A., D.C.L., F.S.A. Sir Charles Peers was Royal Gold Medallist 1933. Gerald de Courcy Fraser[*F*], Alfred Harold Goslett [*F*], Mr. Goslett was an Hon. Auditor 1919–21, 1925–28, 1931–33 and 1935–37. Cyril Wontner Smith [*F*]. Mr. Wontner Smith was Pugin Student 1902. He was a former member of the Art and Literature Standing Committees and had served as an Hon. Examiner. John Murray [*Retd. F*]. Charles Geddes Soutar, F.S.A.(Scot.) [*Retd. F*]. Mr. Soutar was a Vice-President 1939–44. He was a past President of the Royal Incorporation of Architects in Scotland and of the Dundee Institute of Architects and had represented both these bodies on the Council and the Allied Societies' Conference. He was Vice-Chairman of the Allied Societies' Conference from 1937 to 1939 and Chairman in 1939–40. He had also served on the following Committees: Executive, Registration, Co-ordination, Policy, R.I.B.A. Reconstruction (and the Professional Status and Qualifications Group) and as a representative of the Provincial Associations on the Architects Registration Council of the United Kingdom. John William Barrow [*A*]. William Greenwood [*A*]. Mr. Greenwood was Ashpitel Prizeman 1902. John Milne [*A*]. Harold Wyatt [*A*]. James Carruthers [*L*]. Frederick James Lucas [*L*]. Norman Newton [*L*]. William Henry Johnson [*Retd. L*]. S. Norman Shrimpton [*Retd. L*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

## MEETING HELD 6 JANUARY 1953

**The Honorary Fellowship.** The Duke of Norfolk, K.G., G.C.V.O., and the Earl of Scarbrough, K.G., G.C.S.I., G.C.I.E., have accepted the Council's nomination for election as Honorary Fellows.

**New Year Honours.** The congratulations of the Council were conveyed to the following members on whom Her Majesty The Queen had conferred honours: Professor William Holford [*F*]—Knight Bachelor; Mr. M. B. Blackshaw [*A*]—C.B.E., and Colonel M. K. Matthews [*F*]—O.B.E.

**Appointments.** (*A*) *Darlington College of Further Education: R.I.B.A. Representative on Board of Governors.* Mr. T. V. Deas [*A*]. (*B*) *Conference on Tropical Architecture, University College, London, Easter* 1953*: R.I.B.A. Representative on Organising Committee.* Mr. Alister MacDonald [*F*]. (*C*) *Royal Sanitary Institute Health Congress, Hastings,* 1953*: R.I.B.A. Delegate.* Mr. H. Edgar Bunce [*F*] (appointed 9 December 1952). (*D*) *R.I.B.A. Representatives on B.S.I. Committees.* NFE/– Non-ferrous Metals—Mr. C. Sykes [*F*]. PLC/– Plastics—Mr. H. E. D. Adamson [*A*]. ISE/– Iron and Steel—Mr. D. W. Aldred [*F*]. Certification Marking Committee—Mr. F. H. Heaven [*A*]. Committee on Statistical Methods —Mr. D. W. Aldred [*F*]. USM/– Units, Symbols and Technical Data—Mr. E. L. Bird [*A*].

**Private Architectural Practice by Unqualified Persons.** Following upon consideration given to the problem of architectural practice by unqualified persons by the Joint Meeting of Council and Allied Societies' Conference in November, it was agreed to set up a Committee of the Council to review the question in consultation, where necessary, with the County Architects' and City and Borough Architects' Societies, and to make recommendations to the Council. The following members were appointed to the Committee: Mr. T. Nelson Cartwright [*F*], Lieut.-Colonel Eric Cole [*F*], Mr. Harold Conolly [*F*], Mr. Kenneth M. B. Cross [*F*], Mr. R. E. Enthoven [*F*], Mr. P. G. Fairhurst [*F*], Mr. D. E. E. Gibson [*A*], Mr. Leonard C. Howitt [*F*], Mr. R. A. H. Livett [*A*], Mr. F. A. C. Maunder [*F*], Mr. R. W. Paine [*A*], Mr. T. E. Scott [*F*].

**Membership.** The following members were elected: as Fellows—8; as Associates—358; as Licentiates—4.

**Students.** Forty-four Probationers were elected as Students.

**Applications for Election.** Applications for election were approved as follows:

*Election* 3 *March* 1953: as Honorary Fellows, 2; as Fellows, 7; as Associates, 108.

*Election* 5 *May* 1953 (*Overseas Candidates*): as Fellows, 1; as Associates, 12.

**Applications for Reinstatement.** The following applications were approved: as Fellows, Ralph Edward Matthews; as Associate, Eric Vernon Miller.

**Ministry of Housing and Local Government Housing Medals, 1953.** The Minister of Housing and Local Government has again requested the R.I.B.A. to appoint Chairmen of Regional Awards Committees, the architect members of the London Awards Committee and to arrange through the Allied Societies for the appointment of architect members of the Regional Awards Committees.

It was agreed to make the following appointments:

| *Regional Committee* | *Chairman* |
|---|---|
| No. 1 —Northern | Mr. T. J. Cahill [*F*]. |
| No. 2 —East and West Ridings | Mr. R. A. H. Livett [*A*]. |
| No. 3 —North Midland | Professor Stephen Welsh [*F*]. |
| No. 4 —Eastern | Mr. Peter B. Dunham [*F*]. |
| No. 5 —London | (to follow). |
| No. 6 —Southern | (to follow). |
| No. 7 —South-Western | Lt.-Col. Eric Cole [*F*]. |
| No. 8 —Wales | Dr. T. Alwyn Lloyd [*F*]. |
| No. 9 —Midland | Mr. A. G. Sheppard Fidler [*F*]. |
| No. 10—North-Western | Mr. W. Cecil Young [*F*]. |
| No. 12—South-Eastern | Mr. C. E. Culpin [*F*]. |

*Architect Members of London Awards Committee*

Mr. J. F. Howes [*F*].
Miss Judith Ledeboer [*A*].
Mr. Peter Shepheard [*A*].

It was also agreed to ask Allied Societies to nominate representatives on the same basis as in previous years.

**Exhibition of Photographs of Venetian Villas.** On the recommendation of the Public Relations Committee, it was agreed to make enquiries with a view to obtaining an exhibition of some 375 photographs of villas in the Italian province of Veneto, including a number designed by Palladio, to constitute a major exhibition to be shown at the R.I.B.A. during 1954.

**Resignations.** The following resignations were accepted with regret: William John Blain [*F*], William Carter [*A*], Mrs. Ida Collison [*A*], Charles William Glass [*A*], Kevin Graham [*A*], Miss Sylvia Charity Gray [*A*], David Charles Highwood [*A*], Cyril Egerton Hopkins [*A*], Frederick Juniper [*A*], Harry Arnold Rowbotham [*A*], Eric John Sutcliffe [*A*], Walter George Whincop [*A*], Francis Henry Northbrook Crew Kemp [*Retd. A*], Douglas Bell [*L*], Harry Bradley [*L*], Walter Henry Bridgman [*L*], Harry Fishwick Greenwood [*L*], Fred Victor Griffiths [*L*], Ralph Bernard Liddington [*L*], John Frederick Lees Mercer [*L*], Frederic Wales Newby [*L*], Edwin Howard Sills [*L*], Charles Hector Stuart [*L*], Edward Bates [*Retd. L*].

**Applications for Transfer to Retired Members' Class under Bye-law 15.** The following applications were approved: as Retired Fellows: Otis Dudley Black, Frederick Bayliss Nightingale, Andrew Sharp, George Patrick Houston Watson; as Retired Associates: Frederick Arnold Addey, Thomas Hargreaves Broomhall, Herbert James Cook, George Dykes, Arthur Rylatt, Alfred Snell; as Retired Licentiates: Henry George Baker, Frederick William Brucker, Vivian John Cummings, Walter Samuel Rumsby.

**Obituary.** The Secretary reported with regret the death of the following members: Ralph Deakin, O.B.E. [*Hon. A*]. Sir William Goscombe John, R.A., Hon. LL.D. (Wales) [*Hon. A*]. Colonel Albert Leigh Abbott, M.C., T.D. [*F*]. Robert Atkinson, O.B.E., Hon. M. Arch. (L'pool) [*F*]. Mr. Atkinson was Tite

Prizeman 1905 and was awarded the R.I.B.A. London Architecture Bronze Medal, 1937, and the R.I.B.A. Architecture Bronze Medal for Warwickshire, South Staffordshire, Shropshire, Herefordshire and Worcestershire, 1946. He served for very many years on the Council, the Board of Architectural Education, the Competitions Committee and the Town Planning Committee and he had also served on the London Architecture Bronze Medal Jury and the following Committees: Art, Literature, Prizes and Scholarships, Fellowship Drawings, Office of Works, Royal Gold Medal and British Section, Comité Permanent Internationale des Architectes. He was also a member of the Jury of Assessors for the R.I.B.A. New Premises Competition. He was Principal of the Architectural Association School of Architecture from 1913 to 1920 and Director of Education from 1920 until 1929. William Stanley Grice, M.C. [*F*]. George Douglas Hamilton [*F*]. Arthur Harrison [*F*]. Mr. Harrison had served on the Allied Societies' Conference as the representative of the Tees-Side Branch of the Northern Architectural Association. George Blair Imrie [*F*]. Mr. Imrie had served on the Prizes and Scholarships Committee and the Schools Committee. Morris Joseph [*F*]. John Woollatt, M.C. [*F*]. Mr. Woollatt was a past-President of the Nottingham, Derby and Lincoln Architectural Society and had represented that Society on the Council and the Allied Societies' Conference. Edward Percy Hinde [*Retd. F*]. Mr. Hinde was a past-President of the Liverpool Architectural Society and had represented that Society on the Council. Frederick William Shenton [*Retd. F*]. Morrison Hendry [*A*]. Joseph John Wood [*A*], William Hall [*L*]. Mr. Hall was the Chairman of the Halifax Branch of the West Yorkshire Society of Architects. William Leah [*L*]. Alan George MacNaughtan [*L*]. Mervyn Alan Crosley [*Student*]. John Hamilton Serpell [*Student*]. Miss Constance Alice Bailey [*Subscriber*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

# Obituaries

**Robert Atkinson,** O.B.E. [*F*]. By the death, at the age of 69, of Robert Atkinson the architectural profession in this country has lost a man whose teaching and personality greatly influenced the present generation of architects. He was born in 1883 at Wigton, Cumberland, but was brought up in Nottingham. He began his architectural career as an apprentice in 1899 in the office of Mr. Dyson in Newcastle and he later worked in the offices of John Belcher and C. E. Mallows. From the age of 13 he proceeded to win prizes for drawing, design and construction, no less than 26 certificates having been found among his papers; the last two were for the Tite Prize in 1905 and a Certificate of Honourable Mention in the Soane Medallion Competition in 1906. Also in 1906 he won a Board of Education silver medal for measured drawings. He studied at Nottingham School of Art and University College, Nottingham, and later travelled extensively in Italy, Paris and America.

He was elected Associate in 1910 and started practice on his own account at Gray's Inn, sharing rooms with Gascoigne, Horsnell and George Nott who, like himself, were all brilliant draughtsmen. Their speciality was perspective drawings for other architects in which, using mostly pencil and wash, they virtually established a new kind of architectural drawing. In 1913 Atkinson was appointed Principal of the A.A. School of Architecture, then in Tufton Street, Westminster, and he practised with George Alexander who later was killed in the 1914–18 war. He was elected Fellow in 1915.

After the war he began his great work in architectural education at the much expanded A.A. School in Bedford Square. With a team of first-class teachers whom he selected, he turned out a generation of architects now in practice or teaching at other schools throughout the British Commonwealth. The influence of the A.A. of those days has been profound. In 1920 his growing practice, in partnership with W. T. Benslyn, caused him to give up detail administration of the school and he became Director of Education until 1929 when he was succeeded by Mr. Howard Robertson.

In 1924 he took Mr. A. F. B. Anderson [*F*] into partnership and later, his son Mr. J. R. Atkinson [*A*] and they practised first at 129 Wigmore Street and later at 13 Manchester Square. His principal buildings were the Regent Cinema and Ballroom at Brighton, St. Catherine's Church at East Acton, the Gresham Hotel in Dublin, Wallington Town Hall and Library, Stockleigh Hall and other flats in the Regent's Park area, the reconstruction of the Dome and Corn Exchange in Brighton, the Barber Institute of Fine Arts in Birmingham, the Canadian Red Cross Memorial Hospital at Taplow, All Hallows Church at Twickenham, Gibraltar Housing Scheme, the Colman Bequest Galleries in Norwich, Restoration of Bridgwater House in St. James's, Croydon and Wigan power stations (as consulting architect) and much domestic work specially in Cornwall and Wiltshire. He was responsible for the Bath Improvement Scheme and was town planning consultant at Norwich and Lincoln. He was awarded architecture bronze medals for Stockleigh Hall (1937) and the Barber Institute of Fine Arts (1939).

Robert Atkinson acted as assessor in many competitions including those for the R.I.B.A. building, the City Hall, Norwich, the Shakespeare Memorial Theatre at Stratford-on-Avon, County Offices at Hertford and Manchester Town Hall Extension and Public Library. His book *Theory and Elements of Architecture* was written in collaboration with Mr. Hope Bagenal [*F*]. In 1951 he was awarded the O.B.E.

For many years Robert Atkinson served on the Council, the Board of Architectural Education, the Competitions Committee and the Town Planning Committee. He also served on the London Architecture Bronze Medal Jury and on the following committees: Art, Literature, Prizes and Scholarships, Fellowship Drawings, Office of Works, Royal Gold Medal and the British Section, Comité Permanent Internationale des Architects.

The President, Mr. Howard M. Robertson, M.C., A.R.A., S.A.D.G., writes of him: The death of Robert Atkinson at 69 in London, on Boxing Day, came as a shock to his many friends, for he seemingly retained the full force of his physique and mind, and advancing years did not outwardly dim the characteristics which made him a notable personality.

Robert Atkinson filled a particular niche. He combined the creative with the scholarly mind. He knew facts as well as theories. And in respect of the latter his approach was severely logical but always saved from pedantry by his humanism and his practical instinct for finding the right answer to the many problems experienced in an extensive practice.

As a critic he was superlative. He put his finger unerringly on the weak and sometimes tender spots. He could make his victim squirm; but he generally applied, with a brusque geniality, a balm which was a solace to students in particular. His theory lectures at the A.A. were famous, for his reference was wide. And when he dealt with types of buildings he expounded with seeming ease those principles which are basic but which only a man of his calibre can isolate.

Those who know intimately the history of the A.A. Schools can best appreciate how Robert Atkinson, between 1913 and 1920, literally revolutionised teaching, to lay the foundations for the contemporary spirit which governs today in education. He continued as Director and adviser for some years longer, and by the time he left the field of education the A.A. Schools were virile and progressive.

In his own personal architecture Robert Atkinson appeared to many of us as a composer first and foremost. He did not always appear to tarry over details, provided they were right in scale and placing. His sense of colour was sure and undaunted. The impact of his first major cinema—the Regent at Brighton—was very great. It was his No. 1 Symphony, one whose every movement was instinct with vitality.

But there is another building, no longer extant, alas, which some of us prized above all others. That was the vaulted church of St. Catherine, at Hammersmith, a design built on great traditions but transcribed by an architect whose handwriting was visible through it all.

Robert Atkinson had a busy and productive career. A superb draughtsman, an entertaining lecturer, a writer who could have said much more, he must clearly have worked with certainty and speed. Only one thing made him really pause, and that was the window of an alluring antique shop. His collection of antiques was selective and choice; and his knowledge of architectural books a challenge to any bibliophile.

Mr. Niel Martin-Kaye, A.A. Dipl. [*F*] adds the following note:

'Others will attest far more efficiently than I to the significance of Robert Atkinson's contribution to architecture, but only those like myself who had the sterling good fortune and honour to be taught by him, and who, maybe, like myself have taught subsequently, can realise the value of his work in this field. Inspiring to a degree, all his students held him in the deepest awe, reverence and affection and will do so for all the days that remain for them. Much could be said and written, but quite briefly, what he did for so many of us was to break down the mountain ranges and enable us to see beyond, and I submit humbly that no greater service could have been rendered to his art and the profession in the distinctive impart of this superlative gift and for which gratitude can know no measure.'

**Gavin Heynes Jack,** M.I.C.E., F.S.A. [*Retd. F*], for many years County Architect of Herefordshire, died on 22 September 1952 at the age of 78.

Mr. Jack was born in Warwick and was articled to the Borough Engineer's office there in 1889. In 1897 he was appointed deputy surveyor to the Aston Manor U.D.C. and three years later became chief engineer and surveyor. In 1901 he was appointed chief engineer of the Aston, Handsworth, Smethwick and Erdington Main Drainage Board in succession

to the then city engineer of Birmingham and in 1907 he became architect, county surveyor and bridgemaster to the Herefordshire County Council, which post he held until 1926. In that year the post of architect was separated from that of surveyor and bridgemaster, but Mr. Jack continued in the latter capacities until 1933.

Mr. Jack was well known for his work on the maintenance and re-building of bridges and as an antiquary. He is particularly remembered for his work on Wilton Bridge, Ross (since damaged in the war), the Wye Bridge at Hereford and the Eardisland Bridge. In 1948 he contributed an article to the JOURNAL on the subject of bridge building and maintenance with special reference to his own work in Herefordshire. He was joint author, with Mr. A. G. K. Hayter, F.S.A., of two reports to the Woolhope Naturalists' Field Club (of which he was for a time President) on the Roman sites of Magna (Kenchester) and Ariconium, Ross-on-Wye. In 1932 Mr. Jack discovered three new species of old red sandstone fossil fishes at Wayneherbert which are now housed in the British Museum.

From 1932 to 1942 he acted as secretary to the Central Panels Committee which had been set up by the Royal Institute, the Council for the Preservation of Rural England and the Institute of Builders. He was instrumental in getting the control of elevations, established under the 1932 Town and Country Planning Act, into the hands of panels of architects in large areas of the country. In 1937 he read a sessional paper before the R.I.B.A. on the working of the panel system.

Mr. Jack was a past member of the Public Relations Committee of the R.I.B.A. and of the Joint Committee on the Control of Elevations and Siting of Buildings (as a representative of the C.P.R.E.). He was also a Fellow of the Society of Antiquaries and secretary to the society for the County of Hereford, and a Fellow of the Geological Society (at the early age of 19).

**Frank Waddington** [*F*], well known in West Cumberland as both architect and artist, died on 9 July 1952, having been taken ill during his return journey from a holiday in Holland and Belgium. He was 56 years of age. Mr. Waddington was Assistant County Architect, Lancashire, from 1926 to 1945, when he went to Whitehaven, Cumberland.

Mr. A. T. Nicholson [*F*], who worked with Mr. Waddington for many years in the Lancashire County Office, writes the following account of his career:

'A little over a quarter of a century ago Frank Waddington joined the County Architect's staff of the Lancashire County Council following his earlier training with the Blackburn firm of Briggs and Wolstenholme [*FF*]. He came to the office with a reputation as a good architect and a clever artist, and he has left his mark in Lancashire with his designs of the many important county buildings, but perhaps he is better known in the architectural world for his beautiful perspectives, rather on the lines of Cyril Farey, which have been regularly seen in the Royal Academy.

'He was a student at the Blackburn School of Art, where afterwards he was a part-time teacher, and there is no doubt that his later work was greatly influenced by two of his friends, the well-known and popular Lancashire artist, the late Albert Woods, A.R.C.A., and the late William Walcot, R.E., R.B.A. [*F*]. His paintings have been exhibited in the Royal Scottish Academy, Edinburgh, the Walker Art Gallery, Liverpool, and the City Art Gallery, Manchester, and many local authorities have acquired his works. He acted as tutor to the Whitehaven Art Club, and in 1951 he had a one man show of 21 pictures, principally of local interest, at the public library of the Borough of Whitehaven.

'He joined the Grenfell Baines group in Preston during the last war, and in 1945 he commenced a practice in Whitehaven, where he held an appointment with the National Trust in connection with their property in the Cumberland district.

'He had an exceptional creative gift with pencil and brush, and a popular and unassuming character; he was happiest when utilising his wonderful talent with his sketches, paintings, and portraits, and his passing in the prime of his life will be mourned by his many friends.'

Mr. Stephen Wilkinson [*Retd. F*] also contributes an appreciation as follows:

'The death of Frank Waddington has removed one of our most talented perspective artists.

'He first came to my notice when I went to Preston as County Architect for Lancashire County Council. I asked him to make a pencil sketch of the proposed new police station at Bury, Lancs. I was so satisfied with his work that I entrusted him with the preparation of perspective views of every building of importance carried out under me as County Architect.

'It seemed that he could work in any medium and he never had a drawing rejected when submitted for the Royal Academy annual exhibition (I think he exhibited at least 12 times) in the architectural section. In my opinion he ranked along with Walcot, Cyril Farey and all other top liners in this branch of the profession. He was an excellent caricaturist and made a first class job of every work he undertook.'

**William Keay, F.R.I.C.S., M.Inst.C.E.** [*F*], Past President of the Leicester and Leicestershire Society of Architects, died on 12 August 1952, aged 83.

Mr. Keay was principal partner in the firm of Pick, Everard, Keay & Gimson, Leicester, and from 1919 to September 1948 he was Architect and Engineer to the Leicestershire County Council. His principal architectural works include the county offices, Leicester, the Midland Agricultural College, Carlton Hayes hospital (in collaboration with Mr. S. P. Pick), mental deficiency colonies at the Frith, Leicester and Stretton Hall; the Colleges of Art and Technology, Leicester; the churches of St. Philip, St. Chad, St. Christopher, and the Holy Apostles. Besides a filter house, tablets and entrance gates for the Derwent Valley Water Board, Mr. Keay also, in his capacity as engineer, carried out the building of a number of bridges, reservoirs, water supply systems and sewerage schemes.

Besides being a Past President of the Leicester and Leicestershire Society of Architects (1921–1923), Mr. Keay was Past President of the Leicester Association of Engineers, of the local branch of the R.I.C.S. and of the Leicester Rotary Club. In 1936 Mr. Keay was awarded the R.I.B.A. Architecture Bronze Medal for Leicestershire. His hobbies were geology, archaeology, sailing—he kept a five-ton yacht at Oulton for several years—and carpentry. He conducted a 'barn workshop' for the local boys for many years. In the field of geology he kept a record of wells and borings in Leicestershire, afterwards published in a geological memoir *The Wells and Springs of Leicestershire*, read a paper before the British Association in collaboration with his partner, Mr. Martin Gimson, on the submergence of Bardon Hill in Triassic times, and made the discovery of Stockingford shales at Enderby Old Quarry. His archaeological achievements included a monograph, written in conjunction with his wife, on Ulverscroft Priory, Leicestershire, and the discovery of 14th-century slip tiles, and a paper read before the British Association on the Roman origin of the Raw Dykes, Leicester, showing their use as an aqueduct for supplying Roman Leicester with water.

Mr. T. W. Haird [*F*], his partner, writes of Mr. Keay: 'He was a man of great personality and strong character, always ready to help, and was very much respected by members of the architectural and engineering professions, and also by the members of the building industry. He made a great contribution to the life of the city and county of Leicester, and his work and inspiration will be greatly missed.'

**Thomas Edwards Thomas** [*L*] died on 14 July 1952, aged 68.

Mr. Thomas received his training in the office of the Holyhead Urban District Council, starting in private practice about 1906. He subsequently carried out considerable architectural work for the Holyhead U.D.C. and for other local authorities, including Anglesey County Council and Valley Rural District Council. Mr. Thomas undertook the architectural work of the latter for forty years. His work included housing, schools, chapels and during the 1914–18 war aerodromes in Oxfordshire.

**Charles Herbert White** [*F*] died on 11 July 1952 aged 75.

Mr. White served his articles with Messrs. Oatley and Lawrence of Bristol, and worked throughout his career in that city, starting in personal practice in 1920. His principal architectural works were a number of Baptist and Methodist churches, Fonthill Road School, Southmead, Bristol, the Bristol Motor Company's showrooms and offices, and offices in Broad Street, Bristol.

**John Harold Sayner, M.T.P.I.** [*Retd. F*] died on 18 March 1952 aged 69.

Mr. Sayner was a pupil with Mr. George W. Atkinson in Leeds, remaining with him, first in that capacity and then in that of assistant, for five years. In 1903 he moved to London, where he held posts as assistant to C. E. Mallows, George Walton and E. R. Robson, finally in 1909 going to Mr. T. B. Whinney [*F*], architect to the London, City and Midland Bank. Mr. Sayner remained with Mr. Whinney until 1917, and in this time he prepared working drawings for and superintended the erection of over 30 branches of the bank.

From 1917 to 1919 Mr. Sayner was in H.M. forces, being gazetted Lieutenant R.N.V.R. for duty with the Air Service Constructional Corps of the Royal Naval Air Service. After the war Mr. Sayner set up a private practice in Gt. Missenden, Bucks. Among his clients was the Amersham Rural District Council. From 1930 to 1943 he was Town Planning Officer to the Borough of Slough and designed a number of houses for their housing scheme at Stoke Poges.

**Frederick Robert Streeter** [*F*]. The Institute has recently been notified of the death of Mr. Streeter on 18 April 1951 at the age of 56.

Mr. Streeter, who trained at the Architectural Association School of Architecture, practised in Ndola, Northern Rhodesia, from 1929 to 1942, and afterwards in Port Elizabeth. In 1947 he entered into partnership with Mr. E. F. Vos [*A*], and the partnership was responsible for the building of churches, schools, hotels, abattoirs, cinemas, shops, flats and houses. Mr. Streeter was also town valuer to Ndola and Broken Hill.

Mr. Vos carries on the practice.

**William James Hamilton Stevenson** [*F*] died on 9 July 1952, aged 58 years.

He trained in the office of his father, Samuel Stevenson, in Belfast, and became a partner in 1924. His brother, John Hamilton Stevenson, also a partner, pre-deceased him, and the practice (Samuel Stevenson and Sons) is now carried on by the surviving partner, Mr. Samuel G. Goligher [*A*], who joined it in 1940. The partnership carried out extensive industrial, commercial and hospital work.

**Edward William Cowell** [*A*] died on 21 August 1952, aged only 39. He was a partner in the firm of Gotch, Saunders & Surridge of Kettering.

Mr. H. R. Surridge [*F*] writes as follows:

'Although articled to me as a partner of the firm, Mr. Cowell was trained under the influence of the late John Alfred Gotch, past President R.I.B.A. and a partner at the time, and he no doubt received special instruction and benefits from such a principal. He passed his Final Examination, R.I.B.A., at a very early age and the loss to the firm, in which he eventually became a partner, cannot be estimated.

'Upon the outbreak of war, being a junior officer in the Territorial Army, he left for service, and upon his return was gazetted Major although only 32 years of age.

'During his partnership with the firm he did much useful work in connection with the work of the Council for the Preservation of Rural England. He was a founder member of the Kettering Round Table Association. His work on housing, schools, factories, hospitals, etc., would, I am sure, have brought him to the forefront as a very promising architect. He was President of the Northamptonshire Surveyors' Club 1950–1951.

'I write these few lines in testimony to my great loss at his untimely passing.'

**Lawton R. Ford** [*Retd. F*] died on 12 September 1952, aged 90.

Mr. Ford studied at King's College Engineering School and at University College, London. In 1880 he entered the office of Mr. T. Barnes-Williams in Frederick Place, Old Jewry. He subsequently became Mr. Barnes-Williams's partner and remained with the partnership, of which Mr. A. Griffin was the third member, until 1903, when he became District Surveyor to West Wandsworth. He later held similar positions for St. James's, Westminster, and for the borough of St. Marylebone. Mr. Ford was elected Associate in 1896 and Fellow in 1926.

In the course of his private practice Mr. Ford carried out a considerable amount of work in Bermondsey and in and around Oxted, Surrey. In that district he erected a number of country houses. He also acted for a time for the London Congregational Union, was responsible for the Claremont Settlement at Pentonville, and, in a limited competition, prepared the drawings for the Whitfield Mission subsequently carried out by his partners.

**John William Green** [*A*] died on 10 August 1952, aged 65.

Mr. Green served his articles with Messrs. Potter and Sandford, Sheffield, and began personal practice in 1912, in Worksop, Notts. From 1917 to 1919 and 1940 to 1946 he served with the R.E.s. From 1930 to 1933 he practised in Middlesbrough, and from 1933 to 1940 in Stanmore, Middlesex.

# Membership Lists

## ELECTION: 6 JANUARY 1953

The following candidates for membership were elected on 6 January 1953.

AS FELLOWS (8)

**Angus: Laurence Mortimer,** M.A. (Arch.) (Manchester) [*A* 1911].
**Bayes: Kenneth Austin Horton** [*A* 1933].
**Ellis: William Cecil** [*A* 1935], Bishop Auckland.
**Gibson: Alexander George,** A.A.Dipl. [*A* 1933].
**Guttridge: William Alfred,** Dipl.Arch. (Leeds) [*A* 1934].
**Harrison: Donald Dex,** Dipl.Arch. (Leeds), A.M.T.P.I. [*A* 1932].
**Suggitt: Jack Alwyn** [*A* 1936], Birmingham.
**Taylor: Gerald Roy** [*A* 1950].

AS ASSOCIATES (358)

**Abbott: Albert,** East Kilbride.
**Adams: (Miss) Catherine Mary Glen,** D.A. (Glas.), Saltcoats.
**Aitken: (Miss) Audrey Margaret,** Southport.
**Alexander: Douglas Raymond,** Bristol.
**Alford: Brian John,** Stevenage.
**Allen: William John,** Dublin.
**Anderson: Alan John,** Bristol.
**Anderson: Basil John Ramsay,** Norwich.
**Annison: David,** Dipl.Arch. (L'pool), Liverpool.
**Ashcroft: James Huntington,** B.Arch. (L'pool), Liverpool.
**Ashworth: Stanley,** Manchester.
**Baggott: Michael John,** Woodford Green.
**Bailie: Edward Michael,** B.A. (Arch.) (Sheffield), Derby.
**Baker: William John.**
**Banister: Robert,** Sittingbourne.
**Banks: Keith Gordon,** Surbiton.
**Barlow: Richard Anthony,** Corby.
**Barnes: Alan Watson,** M.A. (Cantab).
**Bartlett: John Leslie,** Dipl.Arch. (U.C.L.).
**Barton: Peter Gay,** Dip.Arch. (Cardiff), Cardiff.
**Bass: Edward Victor.**
**Bateman: Geoffrey Frank,** Loughton.
**Bates: Alfred James,** Dipl.Arch. (Northern Polytechnic), Aylesbury.
**Bayley: Michael Hugh Headington,** Dipl.Arch. (Oxford), Maidenhead.
**Bell: Dennis William,** Hull.
**Biggs: Denis Gordon,** Hayling Island.
**Billinge: Roland,** B.Arch. (L'pool), Liverpool.
**Bilton: George Kenneth.**
**Bird: Basil Ingram Robson,** B.Arch. (Dunelm), Newcastle-upon-Tyne.
**Bishop: David Harold,** Dipl.Arch. (Northern Polytechnic).
**Blackburn: James William,** Dipl.Arch. (Leeds), Sheffield.
**Blackmore: Alfred Stanley Gardner,** Dip.Arch. (Nottm.), Nottingham.
**Blee: Michael John,** Hassocks.
**Blyth: David George,** Long Ashton.
**Bodley-Scott: Mark,** Dipl.Arch. (Northern Polytechnic).
**Bolton: Brian Harvey,** Eastbourne.
**Bonfield: William John.**
**Borley: Anthony Philip Gerald,** Ilford.
**Bowes: George William,** Dip.Arch. (Abdn.), Brentwood.
**Bramall: George Morris,** B.A. (Arch.) (Sheffield), Sheffield.
**Brandenburger: John Richard.**
**Bretman: Victor.**
**Brooke: (Miss) Prudence Mary,** B.A. (Arch.) (London), Theydon Bois.
**Brooks: Graham,** Dip.Arch. (Cardiff), Cardiff.
**Brown: Patrick,** Canterbury.
**Brown: Peter Alfred James.**
**Brown: Robert,** Dip.Arch., Dip.T.P. (Dunelm), Sunderland.
**Brunton: Alan,** Dipl.Arch. (Leeds), Trowbridge.
**Brunton: John Graham,** Dip.Arch. (The Polytechnic).
**Buckingham: Michael Vivian,** New Malden.
**Buffery: Kenneth George,** Dip.Arch. (Birm.), Richmond, Surrey.
**Burden: William Albert.**
**Cadwalader: William,** Criccieth.
**Campbell: Colin Stewart,** Thundersley.
**Carpenter: Eric Charles Thomas,** New Malden.
**Carpenter: (Miss) Margaret Laura,** B.Arch. (Dunelm), Newcastle-upon-Tyne.
**Carr: Hugh Henry,** M.C.D., B.Arch. (L'pool), Caernarvon.
**Carruthers: (Mrs.) Elsie Edith.**
**Carter: Edward,** B.Arch. (Dunelm).
**Cartmell: George William,** B.Arch. (L'pool), Blackpool.
**Chambers: George Wilfred,** Dip.Arch. (Dunelm), Gateshead.
**Chilton: Peter,** B.A. (Arch.) (Manchester), Manchester.
**Clapham: Peter,** A.A.Dipl.
**Clayton: (Miss) Jane,** B.Arch. (L'pool), Whitchurch, Salop.
**Clist: Trevor Woodward,** Hadleigh.
**Cobley: Anthony Peter Murray.**
**Cooper: Douglas John,** Coventry.
**Cornelius: Sydney Kenneth,** Southampton.
**Counsell: Raymond Harold,** Godalming.
**Court: Wilfred Ronald,** B.A. (Cantab), Linton.
**Cousins: Michael Tom Robert,** Margate.
**Cowan: Peter David,** Dipl.Arch. (Northern Polytechnic).
**Cox: Frank,** Nottingham.
**Crabtree: Derek William,** Dip.Arch. (Manchester), Burnley.
**Crawford: Gerald Neville,** B.Arch. (L'pool), Gloucester.
**Crinion: David Ellis,** M.C.D., B.Arch. (L'pool), Liverpool.
**Croft: Harold Roy,** Dip.Arch. (Sheffield), Liverpool.
**Crofts: Frederick Arthur,** Stockport.
**Crowther: Geoffrey Joe Winterton,** Dip.Arch. (Nottm.), Newark.
**Cullum: Charles Herbert,** Burbage.
**Darke: Michael Harold,** Dipl.Arch. (Northern Polytechnic).
**Darvall: Peter John,** B.A. (Cantab), Dipl.Arch. (U.C.L.), Harlow.
**Davenport: Thomas Albert,** Dip.Arch. (Birm.), Birmingham.
**Davies: Gerald Arthur,** Leigh-on-Sea.
**Davies: Ian,** Altrincham.
**Davies: John Hywel,** Dip.Arch. (Leics.), Llangefni.
**Davies: Philip Wyn,** Dipl.Arch. (L'pool), Liverpool.
**Dawbarn: Denzil Merton,** Brighton.
**Dean: Christopher Michael,** B.Arch. (L'pool), West Kirby.
**De'Ath: Richard,** D.A. (Glas.), Glasgow.
**Dickens: David George,** Dip.Arch. (Leics.), Leicester.
**Dod: Philip,** B.Arch. (L'pool), Liverpool.
**Dodd: Jeremy Sutton,** Dipl.Arch. (U.C.L.).
**Dolan: Terence Joseph,** B.Arch (Dunelm), Watford.
**Donaldson: Francis.**
**Douglas: (Miss) Phyllis Mary,** B.Arch. (L'pool), Liverpool.
**Dovell: Peter,** B.Arch. (L'pool), Liverpool.
**Dracup: Perceval Louis,** Morden.
**Drowne: George William John,** Slough.
**Dutton: Harold Alfred,** Dip.Arch. (Birm.), Birmingham.
**Edge: Royston Griffith,** Dip.Arch. (Birm.), Bromsgrove.
**Edmonds: Michael Leighton,** Penarth.
**Eliason: Ronald Christopher,** B.Arch. (L'pool), Stevenage.
**Elliott: Eric John,** Plymouth.
**Ellwood: George,** Chorley.
**Elphick: John Alistair,** B.Arch. (L'pool), Cardiff.

**Ely: Eric Alfred.**
**Emmerson: Alan.**
**Ensor: George Harold Wood,** Dip.Arch. (Birm.), Birmingham.
**Evans: Neale Townley,** B.Arch. (L'pool), Wallasey.
**Farrow: Denis George,** Leigh-on-Sea.
**Fennell: Douglas,** Chester.
**Ferguson: Archibald,** D.A. (Glas.), Stirling.
**Field: Eric John,** Westcliff-on-Sea.
**Finney: Peter Laurier,** Warrington.
**Fisher: Walter Anderson,** D.A. (Edin.), Edinburgh.
**Flaux: Louis Michael,** Dip.Arch. (Cardiff), Pontypool.
**Follows: Geoffrey,** Dip.Arch. (Birm.), Stafford.
**Ford: John Francis.**
**Ford: John Robert,** Ilford.
**Ford: Thomas Mair,** D.A. (Glas.), Muirkirk.
**Foster: Christopher Henry,** Sale.
**Fowlie: John,** D.A. (Dundee), Blairgowrie.
**Frew: James,** D.A. (Glas.), Chapelton.
**Friend: Peter Donovan.**
**Fullerton: Peter,** D.F.C., Kingston-on-Thames.
**Fullman: Geoffrey Michael,** Wokingham.
**Gill: William Kenneth,** Dip.Arch. (Leics.), Chesterfield.
**Good: Robert,** Rossendale.
**Gould: James,** Dip.Arch., Dip.T.P. (Dunelm), Sunderland.
**Greenwood: (Miss) Patricia Kathleen,** Woking.
**Grima: Godfrey Henry,** Dipl.Arch. (Northern Polytechnic).
**Grisley: (Miss) June Rose,** Leigh-on-Sea.
**Hance: Dennis Roy,** Chelmsford.
**Harding: Morison,** Dip.Arch. (Dunelm), Houghton Le Spring.
**Hargreaves: Eric William,** D.A. (Glas.), Glasgow.
**Harper: Michael,** Dip.Arch. (Birm.), Solihull.
**Harris: William Arthur Richard,** Dip.Arch. (Cardiff), Llandilo.
**Harrison: John David,** Ashford, Kent.
**Hart: Kenneth Royston,** Old Windsor.
**Hazelwood: Valentine Harry.**
**Heads: William Smith,** Dip.Arch. (Dunelm), South Cramlington.
**Heaton: Alexander McDonald,** D.A. (Glas.).
**Heyward: Harold,** Manchester.
**Heywood: John Henry,** Richmond, Surrey.
**Hicks: Philip Arthur.**
**Hill: Reginald George,** Bristol.
**Hills: Bernard Hugh Frank,** Westgate-on-Sea.
**Hiorns: Bernard Weeks,** Dipl.Arch. (Northern Polytechnic).
**Hodkinson: Gordon,** Manchester.
**Holt: John Codling,** B.Arch. (L'pool), Birmingham.
**Hopkins: Phillip,** Ashford, Kent.
**Howell: Peter Dennis Alfred,** Dip.Arch. (Cardiff), Winchester.
**Hudson: Ralph Malcolm,** Huddersfield.
**Hughes: Hugh Maelor,** Dip.Arch. (Cardiff), Pencoed.
**Humble: (Miss) Dorothea Mary Mindham,** Dip.Arch. (Dunelm).
**Humphrey: Leslie Roy,** Dipl.Arch. (Northern Polytechnic), High Wycombe.
**Humpston: Frank Ambrose,** M.C.D., B.Arch. (L'pool), Colwyn Bay.
**Hunter: James Crawford,** Falkirk.
**Hurst: (Mrs.) Miriam.**
**Hyde: Norman Vincent,** B.A. (Arch.) (London), Hitchin.
**Ingham: John Harold,** Rochester.
**Ingram: Hugh Nicholas,** Bristol.
**Ingram: Robert Wilfred,** Dip.Arch. (Leics.), Bournemouth.
**Jackson: Brian William,** Manchester.
**James: Alan Edwin,** Wallington.
**James: Kenneth Douglas,** B.A. (Arch.) (Sheffield), Beverley.
**Jamieson: Alan George,** Dipl.Arch. (L'ds), Leeds.
**Jardine: William,** Bearsden.
**Jones: Harold Gordon,** Dip.Arch. (Manchester), Disley.
**Jones: Richard Owen,** Dip.Arch. (Leics.), Caernarvon.
**Joy: Alec Hugh,** M.A. (Cantab) (Engineering), B.Arch. (L'pool), Bridport.
**Kanelba: George Stanislas.**
**Kay: John Davenport.**
**Kay: John Shields,** D.A. (Glas.), Glasgow.
**Keelan: John,** B.Arch. (L'pool), Liverpool.
**Keenan: Terence Anthony,** Dipl.Arch. (Northern Polytechnic), Ilford.
**Keenleyside: Robert,** Dip.Arch., Dip.T.P. (Dunelm), Bedlington.
**Kellaway: Stanley Albert,** Parkstone.
**Kelsey: Peter Geoffrey,** Hull.
**Kent: S. William,** Gorleston.
**Key: Frederick Allen.**
**King: Nigel Leonard.**
**King: William James,** D.A. (Glas.), Gourock.
**Kingston: Christopher Michael Pyne,** Dip.Arch. (Leics.), Wigston Fields.
**Kirk: Harry Vernon,** B.Arch., Dip.T.P. (Dunelm), Newcastle-upon-Tyne.
**Kirkland: William Thomson,** D.A. (Glas.), Stonehouse.
**Kitchen: William.**
**Kitchin: John Leslie Harlow,** Dip.Arch. (Birm.).
**Knight: Geoffrey Snowden.**
**Laws: (Mrs.) Betty Irene,** Dipl.Arch. (Northern Polytechnic).
**Leather: Geoffrey Mowatt,** Dip.Arch. (Cardiff), Tilford.
**Le Claire: Peter Bernard,** Dip.Arch. (Nottm.), Henley-on-Thames.
**Lee: John Harrison,** Dip.Arch. (Dunelm), Newcastle-upon-Tyne.
**Levett: Vivian,** Croydon.
**Lewin: Frederick Alexander.**
**Lishman: John,** Dip.Arch. (Cardiff), Cardiff.
**Lloyd: Donald.**
**Logan: Eric Frank,** Maldon.
**Loshak: Lionel Joseph,** B.Arch. (McGill).
**Lovell: Roy Henry,** Dipl.Arch. (Northern Polytechnic), Beckenham.
**McCulloch: (Miss) Margaret Smith,** D.A. (Glas.), Glasgow.
**McFarlane: Norman John,** Dipl.Arch. (L'pool), Liverpool.
**Mackay: Neville Lucien,** Dipl.Arch. (Leeds), Harrogate.
**Macnab: George Alexander,** Dip.Arch. (Abdn.), Aberdeen.
**Macpherson: Donald Hugh,** D.A. (Glas.), Johnstone.
**Marshall: Ronald Leslie,** Southend-on-Sea.
**Martin: Reginald John,** Wroxham.
**Martin: William Alban,** Bristol.
**Massie: Alexander John,** Dip.Arch. (Abdn.), Aberdeen.
**Masson: Brian Charles,** Beckenham.
**Mawson: David,** Norwich.
**Mawson: Ronald Vivian Peter,** Dip.Arch. (Nottm.), Scunthorpe.
**Mayer: Victor Charles.**
**Medhurst: Desmond Franklin,** D.F.C., Shepton Mallet.
**Megins: Norman Williamson,** Dip.Arch. (Cardiff), Maesteg.
**Menzies: Gilbert Douglas,** D.A. (Edin.), Edinburgh.
**Miles: Douglas William,** Liverpool.
**Miller: Robert Eric,** Dipl.Arch. (U.C.L.), Brighton.
**Milton: Michael Stephen.**
**Misselbrook: Sydney Alfred.**
**Mobsby: Keith Stewart,** Leigh-on-Sea.
**Moholi: Emeric Felix,** Dip.T.P. (Lond.), A.M.T.P.I.
**Morgan: Alwyn,** Dolgelley.
**Morgan: Fothergill Tudor,** Dip.Arch., (Cardiff), Abergavenny.
**Morgan: Ronald Hugh,** Dorking.
**Morley: Peter Gerald,** Selsey.
**Morris: Brian Reginald,** B.Arch. (L'pool), Boston.
**Morris: (Miss) Valerie Jean,** Sidcup.
**Myner: Dennis George Charles,** St. Albans.
**Nash: Percy George,** Southend-on-Sea.
**Newton: V. M.**
**Nixon: Ernest John Brown,** Llangefni.
**Noak: Hans,** Hull.
**Nock: Colin Alexander Harold,** Weston-super-Mare.
**Odham: John Cecil Hamilton.**
**Onafowokan: Michael Olutusen,** B.Sc. (Arch.) (Glas.), Glasgow.
**Oulton-Clark: Charles Bernard,** Whipps Cross.
**Owen: Frederick,** Dip.Arch. (Cardiff), Swansea.
**Pace: Joseph James,** Dip.Arch. (Dunelm).
**Parker: John Kisby,** Dip.Arch. (Leics.), Wisbech.
**Parker: Joseph Roy,** B.Arch. (L'pool), Liverpool.
**Paterson: John Melvin,** Hove.
**Paterson: Stuart Hodgson,** D.A. (Glas.), Airdrie.
**Pearce: Anthony le Mesurier,** Dip.Arch. (Nottm.), Hove.
**Pickard: George Richard,** Dip.Arch. (Leics.), Leicester.
**Pickering: Robert Gerald,** Dipl.Arch. (Leeds), Ilkley.
**Pilkington: John Blair,** Maghull.
**Pittendrigh: Hector Bevester.**
**Platt: Deric Robson,** Dip.Arch. (Sheffield), Derby.
**Platt: (Mrs.) Katherine Mary,** B.A. (Arch.) (Sheffield), Derby.
**Poole: Leonard Edwin John,** Welwyn Garden City.
**Pound: John Roderick,** B.A. (Arch.) (Sheffield), Northampton.
**Powell: Gilbert,** Coventry.
**Power: Edmund Berry,** D.S.C.
**Rae: James Roy,** Dip.Arch. (Abdn.), Glasgow.
**Rahilly: Walter Anthony,** B.Arch. (N.U.I. Dublin), Dublin.
**Rankin: Robert Barr,** D.A. (Glas.), Glasgow.
**Rathbone: David Trevor,** Dip.Arch. (Birm.), Birmingham.
**Rendle: Timothy John,** Hove.
**Rice: (Miss) Anne Kathleen,** Southampton.
**Rice: (Miss) Mary Elizabeth,** Southampton.
**Rice: Maurice Redvers,** Southampton.
**Richardson: John Lear,** Hull.
**Rider: Barrie Arthur,** Dipl.Arch. (L'pool), Wallasey.
**Rigg: Robert William,** Taunton.
**Roberts: Stanley Leonard,** Surbiton.
**Robertson: Robert,** D.A. (Glas.), Rutherglen.
**Robinson: Cecil Heath Vicker,** A.A. Dipl., Hornchurch.
**Robson: Peter Wilson,** Dip.Arch., Dip.T.P. (Dunelm), Barnard Castle.
**Robson: (Miss) Roma Austral,** Havant.
**Rochford: John Patrick,** M.C.D., B.Arch. (L'pool), Blackburn.
**Roddick: Dennis Mathieson Carlyle,** Birkenhead.
**Roe: Donald Charles.**
**Rogers: Ian Grant,** Dip.Arch. (Abdn.), Aberdeen.
**Rolfe: Maurice.**
**Ross: Donald Harper,** Dip.Arch. (Abdn.), Aberdeen.
**Salmon: William Henry Geoffrey,** A.A.Dipl.
**Scott: Kenneth Coleridge,** Richmond, Surrey.
**Shaw: Ralph Alan,** M.C.D., B.Arch. (L'pool), Blackpool.
**Shipman: Gerald John,** B.A. (Cantab.), A.A. Dipl.
**Simmonds: Maurice Frank,** Portsmouth.
**Skipp: Leslie Edward.**
**Sloane: Eric,** D.A. (Glas.), Glasgow.
**Smith: Alan Bertram,** Dip.Arch. (Leics.).
**Smith: Allan Don,** Paisley.
**Smith: Charles Kenneth George,** Brampton.

**Smith: Douglas Henry,** Dip.Arch. (Leics.), Leicester.
**Smith: Harry Locke,** Dipl.Arch. (Leeds), Bingley.
**Smith: Kenneth Middleton,** Hove.
**Spence: Gordon Alfred George.**
**Spencer: Richard Harry Ramsay.**
**Spurr: John Stephen,** Dipl.Arch. (Leeds), Leeds.
**Stannard: Patrick,** Southsea.
**Stevens: Donald William,** Birchington-on-Sea.
**Stiles: Leslie Arthur,** Bromley.
**Stout: Thomas,** B.Arch. (L'pool), Leigh.
**Stride: Barton Edward,** Bristol.
**Stringer: Michael,** M.A. (Cantab.), Mayfield.
**Strowiger: Kenneth James Arthur,** Rayleigh.
**Sudbury: Robert Ivan,** Ilkeston.
**Sunderland: Maurice,** Belfast.
**Sursham: Anthony Ernest Harold,** B.A. (Arch.) (Cantab.), St. Albans.
**Sykes: Frank,** Dipl.Arch. (Leeds), Morecambe.
**Szczerbowicz: Stefan Wladyslaw,** Dipl.Arch. (Oxford).
**Tapp: (Miss) June Margaret,** Dipl.Arch. (U.C.L.), Wetherby.
**Taylor: Derek Baughan,** B.Arch. (L'pool), Derby.
**Taylor: (Miss) Dorothy Muriel,** Coventry.
**Taylor: Eric James.**
**Taylor: Norman,** B.Arch. (L'pool), Stockport.
**Taylor: Ronald Frederick,** Hull.
**Tennent: Douglas Duncan,** Ashford, Kent.
**Theaker: Alan,** Dipl.Arch. (Leeds), Redcar.
**Thimbleby: Peter,** Rugby.
**Thomas: Henry Arthur Conroy,** Southsea.
**Thompson: Owen Edgar.**
**Thomson: James Baxter,** Orpington.
**Thorndyke: Arthur Ernest,** Leicester.
**Thorne: Eric Gordon,** Manchester.
**Thornton: Derek Victor,** Dipl.Arch. (Northern Polytechnic).
**Thorpe: Anthony Winton,** Llandyssul.
**Thynne: Henry William.**
**Tibble: Leslie Robert Malcolm,** Southampton.
**Tomlinson: James Bernard,** Stafford.
**Towns: (Miss) Ann Madeliene Leonie Hayes.**
**Trevett: George Albert,** Surbiton.
**Tulitt: Christopher William,** Portsmouth.
**Turner: Alan Norman,** Dip.Arch. (Birm.), Birmingham.
**Tyrrell: Allan Francis,** Dip.Arch. (Cardiff), Cardiff.
**Ure-Reid: George,** Dip.Arch. (Abdn.), Aberdeen.
**Vincent: Ronald John.**
**Wackerbarth: Richard Malcolm,** B.A. (Arch.) (Sheffield).
**Walker: John Stafford,** Hull.
**Walker: Robert,** Dip.Arch. (Abdn.), Aberdeen.
**Walls: Lawrence Edward,** Barking.
**Warren: Roy Frederick,** Dip.Arch. (Nottm.), Long Eaton.
**Watt: Donald Moore,** Preston.
**Watts: Edward Maynard,** Redhill.
**Weddle: Arnold Edgar,** B.Arch., Dip.T.P., (Dunelm), Reading.
**Welsh: Robert Gordon,** D.A. (Glas.), Moffat.
**White: Paul,** M.A. (Cantab.).
**White: Thomas,** Dip.Arch. (Dunelm), Newcastle-upon-Tyne.
**Whiteley: Charles Donald,** Dipl.Arch. (Leeds), Harrogate.
**Whitley: Robert James,** Hertford.
**Whitmore: Frederick Walter.**
**Wilde: Robert Arnold,** Dipl.Arch. (Leeds), Leeds.
**Wilkinson: Dennis,** Dip.Arch. (Dunelm), Manchester.
**Will: Oscar Evelyn,** Ilford.
**Willems: Denis.**
**Williams: Peter Gordon,** B.A. (Arch.) (Sheffield), Hessle.
**Williams: Roy Dixon,** Dip.Arch. (Nottm.), Birkenhead.
**Willmore: Oliver Darien,** Dip.Arch. (Cardiff), Cardiff.
**Wilson: Geoffrey,** M.Sc. (Leeds), Leeds.
**Witham: Kenneth Perry Vincent,** Dip.Arch. (Sheffield), Frome.
**Woodward: Geoffrey Frederick,** B.Arch. (L'pool), Hertford.
**Wrench: Alexander Kenneth Grieve,** D.A. (Glas.), Falkirk.
**Wynn: Dennis Alder.**
**Yeats: Robert Mackenzie,** East Kilbride.

AS LICENTIATES (4)

**Goulding: Leslie Stuart.**
**Rading: Professor Adolf.**
**Taylor: William Eric,** Londonderry.
**Tomei: Laurence Francis Stephen,** Croydon.

## ELECTION: 3 MARCH 1953

An election of candidates for membership will take place on 3 March 1953. The names and addresses of the candidates with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Monday 9 February 1953.

The names following the applicant's address are those of his proposers.

AS HON. FELLOWS (2)

**Norfolk: The Rt. Hon. Duke of,** K.G., G.C.V.O., Arundel Castle, Arundel, Sussex. Proposed by the Council.

**Scarbrough: The Rt. Hon. Earl of,** K.G., G.C.S.I., G.C.I.E., T.D., Sandbeck Park, Rotherham. Proposed by the Council.

AS FELLOWS (7)

**Atherton: Eric Sydney William,** A.M.T.P.I., Dip.T.P. (The Polytechnic) [*A* 1940], 7 St. John's Road, Harrow, Middlesex. Denis Poulton, Norman Keep, F. G. Goodin.

**Berry: Joseph Gordon,** M.C. [*A* 1940], 5 Market Walk, Huddersfield; 146 Trinity Street, Huddersfield. Hubert Bennett, G. H. Foggitt, Eric Morley.

**Brett: Reynolds Keen** [*A* 1936], Allendale, East Borough, Wimborne, Dorset; Aldersmead, Spetisbury, Blandford. L. S. Youngman, James Allner, L. M. Austin.

**Davies: Richard Horron,** A.A.Dipl. [*A* 1945], 27 Grosvenor Place, S.W.1; 'Threeways', Kingswood, Surrey. Frederick Gibberd, A. M. Chitty, Howard Robertson.

**Hobbiss: Maurice Anthony Holland,** M.A. (Cantab.); A.A.Dipl. [*A* 1939], 36 Waterloo Street, Birmingham, 2; 56 Witherford Way, Selly Oak, Birmingham. H. W. Hobbiss, H. G. Wicks, G. B. Cox.

**Thomerson: Douglas Albert,** A.A.Dipl., A.R.I.C.S. [*A* 1935], 76 Finsbury Pavement, E.C.2; 22 Elevenacre Rise, Loughton, Essex. R. C. Foster, R. O. Foster, Harold Mileson.

**Wright: Henry Myles,** M.A. (Cantab.) [*A* 1933], 1 Bank Buildings, Princes Street, E.C.2; 13 Church Street, Chesterton, Cambridge. Prof. R. Gardner-Medwin, Prof. Gordon Stephenson, Prof. Sir William Holford.

AS ASSOCIATES (108)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

**Adlam: Basil Walter,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech. Sch. of Arch.), 'Brandon', 14 Lynn Road, Gaywood, King's Lynn, Norfolk. F. Chippindale, T. W. Haird, S. Penn Smith.

**Agar: Robert Julian,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 88 Carr Lane, Acomb, York. C. W. C. Needham, C. R. Thorp, A. N. Thorpe.

**Allen: Rodney James** [Final], 3 Osprey Avenue, Chatham, Kent. H. C. Ashenden and applying for nomination by the Council under Bye-law 3 (*d*).

**Ashenden: Jeffrey** [Final], St. Paul's Rectory, Salisbury, Wilts. H. C. Ashenden, W. H. R. Blacking, R. J. Potter.

**Aylott: (Miss) Iris Daphne** [Final], 1 Croham Park Avenue, South Croydon, Surrey. J. S. Walkden, K. L. Sharpe, Charles Sykes.

**Baker: Albert John** [Special Final], 10A Trentham Street, Southfields, S.W.18. Paul Nightingale, Edwin Rice, W. W. Fisk.

**Barrett: Trevor Lionel,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 87 Lady Lane, Chelmsford, Essex. Lewis John, Harold Conolly, Denis Senior.

**Bather: Leonard Marshall,** Dip.Arch. (Manchester) (Victoria Univ. Manchester: Sch. of Arch.), 9 Worsley Avenue, Latchford, Warrington, Lancashire. Prof. R. A. Cordingley, E. M. Parkes, E. P. Mawson.

**Bettison: Jim,** Dipl.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), 5 Ainley Street, Elland, Yorks. Clifford Hickson, H. A. Hickson, Norman Culley.

**Briggs: Granville Ewart** [Final], 74 Kenbury Street, Camberwell, S.E.5. E. M. Rice, C. G. Stillman, D. R. Humphrys.

**Briscoe: Wilson,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech. Sch. of Arch.), 4 Knighton Drive, Leicester. F. Chippindale, S. Penn Smith, Kenneth Ward.

**Brown: Charles Roger Bridgmore,** B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ of Liverpool), 7 Grove Road, Liverpool, 6. Prof. L. B. Budden, G. E. Charlewood, Prof. Gordon Stephenson.

**Brown: Derek Walsham,** B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), 96 Frodingham Street, Scunthorpe, Lincs. Prof. L. B. Budden, Prof. R. Gardner-Medwin, B. A. Miller.

**Buttery: John Lewis** (Victoria Univ. Manchester: Sch. of Arch.), Sunnyside, Norden, Rochdale. Prof. R. A. Cordingley, Harold Bowman, H. S. G. Eldred.

**Chalk: Douglas John,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 112 Baginton Road, Coventry. A. Douglas Jones, T. M. Ashford, C. E. M. Fillmore.

**Charlton: William Edward** [Final], 1A East Avenue, Benton, Newcastle-on-Tyne, 7. Prof. W. B. Edwards, F. W. Harvey, J. H. Napper.

**Clibbon: (Miss) Sheila Constance** [Final], 20 Kensington Gate, W.8. J. S. Walkden, Sir Hugh Casson, J. W. Macgregor.

**Clow: John Angus,** Dip.Arch. (Dunelm) (King's Coll. (Univ. of Durham), Newcastle-upon-Tyne, Sch. of Arch.), 18 Hatherton Avenue, Cullercoats, Northumberland. G. H. Gray, J. H. Napper, Prof. W. B. Edwards.

**Cook: Kenneth Douglas Arthur** [Final], 75 Parkside, Didcot, Berks. C. W. Box, W. H. R. Blacking, Robert Potter.

**Cooper: Harold George,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech. Sch. of Arch.), Dewland Manor, Rotherfield, Crowborough, Sussex. F. Chippindale, E. C. Kent, T. F. Ford.

**Cordingley: Robert Alan,** B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), 497 Middleton Road, Chadderton, Nr. Manchester. Prof. L. B. Budden, Prof. R. Gardner-Medwin, B. A. Miller.

**Cottier: Bernard Vincent Kenneth,** D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 28 Pilrig Street, Edinburgh, 6. J. R. McKay, Leslie Grahame-Thomson, W. H. Kininmonth.

**Crawford: Ronald, D.F.C.** [Final], 12 Swinburne Street, Derby. F. H. Crossley, T. W. East, E. H. Ashburner.

**Crisp: Neil,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 19 Rectory Road, Solihull, Birmingham. A. Douglas Jones, T. M. Ashford, A. R. Young.

**Cudworth: John,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 17A Prospect Road, Ossett, Yorks. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Dakin: Maurice Charles,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 33 Gordon Street, Ilkley, Yorks. Noel Pyman, W. A. Ledgard, W. H. King.

**Donovan: Stanley Leslie,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech. Sch. of Arch.), 21 Lewis Road, Sutton, Surrey. F. Chippindale, S. Penn Smith, G. A. Cope.

**Dring: Leslie Felgate,** Dipl.Arch. (Oxford) (Sch. of Tech. Art and Commerce, Oxford: Sch. of Arch.), 'Molteno', Woodstock Road, Witney, Oxon. J. R. Tolson, G. R. Hutton, E. A. L. Martyn.

**Eaglen: Gordon,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 16 Cowper Road, Harehills, Leeds, 9. Hubert Bennett, Spencer Silcock, A. W. Glover.

**Edwards: Albert Arthur,** Dip.Arch. (Manchester) (Victoria Univ. Manchester: Sch. of Arch.), 21 Bulkeley Road, Cheadle, Cheshire. Prof. R. A. Cordingley, J. P. Nunn, W. C. Young.

**Ellender: William Brian Randle,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 110 Station Street East, Foleshill, Coventry, Warwickshire. A. Douglas Jones, Rolf Hellberg, Laurence Williams.

**Fawkes: Ronald Lewis,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 5 Farrer Road, Longsight, Manchester, 13. C. Sunderland, P. G. Fairhurst, B. L. Moir.

**Fell: Peter,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech.: Sch. of Arch.), Department of Building, Technical College, Blackpool, Lancs. F. Chippindale, T. W. Haird, S. Penn Smith.

**Fraser: Neville,** Dip.Arch. (Dunelm) (King's Coll. (Univ. of Durham), Newcastle-upon-Tyne, Sch. of Arch.), 9 Granville Road, Jesmond, Newcastle-upon-Tyne, 2. Prof. W. B. Edwards, R. N. Mackellar, J. H. Napper.

**Fryer: Geoffrey Richard Downing,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 301 Orphanage Road, Sutton Coldfield, Warwickshire. A. Douglas Jones, T. M. Ashford, J. B. Cooper.

**Galloway: Charles,** D.A. (Glas.) (Glasgow Sch. of Arch.), 2 Grove Road, Pinner, Middlesex. Prof. W. J. Smith, L. H. Ross, Basil Hughes.

**Godbey: William John,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), Langdale, Mountain Road, Caerphilly, Glam. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Goodman: Alan,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), 39 Woodford Road, Kingsway, Derby. Applying for nomination by the Council under Bye-law 3 (*d*).

**Hall: Harry,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), Flat 10, 'High Peak', 103 Forest Road West, Nottingham. Applying for nomination by the Council under Bye-law 3 (*d*).

**Halley: (Miss) Mabel,** D.A. (Glas.) (Glasgow Sch. of Arch.), 7 Dallerie Road, Crieff, Perthshire. Prof. W. J. Smith, G. C. Young, W. E. Thomson.

**Halliday: Alexander,** B.Sc. (Arch.) (Glas.) (Glasgow Sch. of Arch.), 61 Mossneuk Park, Wishaw, Lanarkshire. Prof. W. J. Smith, William McCrea, Gabriel Steel.

**Hammond: Gerald Arthur Douglas** Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), c/o The Bank of Scotland, West End, Aberdeen. E. F. Davies, George Ford and applying for nomination by the Council under Bye-law 3 (*d*).

**Harding: John Keith,** Dipl.Arch. (Oxford) (Sch. of Tech. Art & Commerce, Oxford: Sch. of Arch.), 17 Lincoln Road, Oxford. J. R. Tolson, E. A. L. Martyn, David Beecher.

**Harrison: George Angus,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), 72 Douglas Road, Long Eaton, Notts. J. W. M. Dudding, F. H. Crossley, E. H. Ashburner.

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**Hawkins: George John,** Dipl.Arch. (Oxford) (Sch. of Tech., Art & Commerce, Oxford: Sch. of Arch.), 1022 Wimborne Road, Moordown, Bournemouth. L. M. Austin, David Booth, J. R. Tolson.

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**Hirst: John Terence,** Dip.Arch. (Leics.) (Leicester Coll. of Art & Tech.: Sch. of Arch.), 16 Cottesmore Road, Uppingham Road, Leicester. F. Chippindale, S. Penn Smith, T. W. Haird.

**Hodgkinson: Peter Rowland,** B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), Spring Bank, Penrhyn Bay, Caerns., N. Wales. Prof. R. Gardner-Medwin, Prof. Gordon Stephenson and applying for nomination by the Council under Bye-law 3 (*d*).

**Hudson: Frederick Stuart** [Final], 72 Warren Wood Road, Rochester, Kent. D. W. Aldred, B. W. Fitch-Jones, F. D. Ward.

**Hurley: Harold Martin** [Special Final], 169 Brixton Road, S.W.9. Applying for nomination by the Council under Bye-law 3 (*d*).

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**Ineson: John Trevor,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), Briarfields, Street Lane, Gildersome, Nr. Leeds. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Jackson: Keith Francis,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), 41 Cardigan Street, Derby. Applying for nomination by the Council under Bye-law 3 (*d*).

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**Jones: John Ieuan Ceri,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 8 Lewis Terrace, New-Quay, Cardiganshire. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Keighley, John,** D.A. (Glas.) (Glasgow Sch. of Arch.), 30 Caprington Avenue, Kilmarnock. Prof. W. J. Smith, Gabriel Steel, William McCrea.

**La Touche: Richard John Digges,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), Delgany, Kings Avenue, Radyr, Cardiff. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Lawrence: Charles Alfred,** D.A. (Glas.) (Glasgow Sch. of Arch.), c/o Parkin, 12 Salutor Mount, Heavitree, Exeter. Prof. W. J. Smith, C. W. Roberts, H. B. Rowe.

**Lewis: Richard Frank,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 'Ferncliffe', 15 Stow Park Crescent, Newport, Mon. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Lomas: George Richard Albert,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 44 Highfield Lane, Chesterfield, Derbyshire. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Lyddon: William Derek Collier,** B.A.(Arch.) (Lond.) (Bartlett Sch. of Arch.: Univ. of London) 30 Stony Croft, Stevenage. Herts. Prof. H. O. Corfiato, Thomas Ritchie, Maxwell Ayrton.

**McConnell: Gavin Haveron** [Final], 35 Montague Street, Glasgow, C.4. William McCrea, Prof. W. J. Smith, Alexander Wright.

**Mather: John Vincent** [Final], 324 Slade Lane, West Point, Levenshulme, Manchester, 19. Cecil Stewart, J. S. Beaumont, F. M. Reynolds.

**Mendelsohn: Stanley Bernard,** Dipl.Arch. (Oxford) (Sch. of Tech. Art & Commerce, Oxford: Sch. of Arch.), 20 Burnaby Gardens, Chiswick, W.4. J. R. Tolson, David Booth, C. E. Culpin.

**Middleton: John,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), 'Southwick', Park Avenue, Hucknall, Notts. T. N. Cartwright, C. F. W. Haseldine, J. W. M. Dudding.

**Millar: William Wilson,** D.A. (Glas.) (Glasgow Sch. of Arch.), Davingill House, Crossford, Carluke, Lanarkshire. L. W. Hutson, Prof. W. J. Smith, L. D. Paterson.

**Miller: Robert Towler,** B.Arch. (Dunelm) (King's Coll. (Univ. of Durham), Newcastle-upon-Tyne, Sch. of Arch.), 6 Greenwood Avenue, Linthorpe, Middlesbrough. Prof. W. B. Edwards, W. E. Haslock, J. H. Napper.

**Moffatt: Graham Richards** (Northern Poly. (London): Dept. of Arch.), 16 Grove Gardens, Hendon, N.W.4. T. E. Scott, H. Bramhill, George Coles.

**Montgomery: Joseph** [Special Final], 8 Croft Court, Brickwall Lane, Ruislip, Middlesex. G. A. Henry, E. A. Newton, Gordon O'Neill.

**Murray: William,** D.A. (Glas.) (Glasgow Sch. of Arch.), 9 Coltness Road, Wishaw, Lanarkshire. L. W. Hutson, L. D. Paterson, Prof. W. J. Smith.

**Mylne: John David Louis,** D.A. (Edin.) (Edinburg. Coll. of Art: Sch. of Arch.), 2 Windsor Street Lane, Edinburgh, 7. Basil Spence, W. H. Kininmonth, W. I. Thomson.

**Nears-Crouch: Desmond Hubert,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 73 Graham Avenue, Withdean, Brighton, Sussex. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Notman: John Robertson,** D.A. (Glas.) (Glasgow Sch. of Arch.), 34 Belmont Street, Glasgow, W.2. A. G. Henderson, Prof. W. J. Smith, William McCrea.

**O'Reilly: John Eustace,** B.Arch. (N.U.I., Dublin) (Univ. Coll. Dublin, Ireland: Sch. of Arch.), 5 Greenlea Park, Terenure, Dublin. J. V. Downes, Raymond McGrath, J. O'H. Hughes.

**Parkinson: (Mrs.) Elizabeth June,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), Arcade Chambers, Queen Street, Morley, Nr. Leeds. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Pearson: Harold William,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 43 Portland Street, Leamington Spa, Warwickshire. A. Douglas Jones, C. E. M. Fillmore, T. M. Ashford.

**Plastow: Norman Frederick** [Final], 48 Griffiths Road, Wimbledon, S.W.19. Sir Thomas Bennett, M. L. Winslade, P. A. W. Roffey.

**Pocock: Maurice David,** Dipl.Arch. (Oxford) (Sch. of Tech., Art and Commerce, Oxford: Sch. of Arch.), Emanon House, Danywern Drive, Winnersh, Wokingham, Berks. J. R. Tolson, E. A. L. Martyn, David Beecher.

**Powell: Herbert Alexander** [Final], 1A Frith Road, Leytonstone, E.11. D. W. Aldred, R. C. Foster, R. O. Foster.

**Preston: John,** D.A. (Edin.) (Edinburgh Coll. of Art: Sch. of Arch.), 10 Drumdryan Street, Edinburgh. Leslie Grahame-Thomson, Basil Spence, J. R. McKay.

**Pugh: Alun,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 59 Cartland Road, Birmingham, 30. Lewis John, C. F. Jones, Dr. T. A. Lloyd.

**Quick: Olaf,** Dip.Arch. (Cardiff) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 15 Ninian Street, Treherbert, Glamorgan. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Ridge: Thomas,** M.C.D., B.Arch. (L'pool) (Liverpool Sch. of Arch.: Univ. of Liverpool), 'Garth', Weston Lane, Oswestry. Prof. L. B. Budden, Prof. Gordon Stephenson, Kenneth Palmer.

**Roberts: Eric Norman** [Final], 14 Cranleigh Gardens, Loughton, Essex. D. W. Aldred, J. K. Hicks, T. J. Lynch.

**Robinson: Leonard William,** B.Arch. (Wales) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 48 North Drive, Great Yarmouth, Norfolk. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Scott: George Gray Thomson,** Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 83 Mile-End Avenue, Aberdeen. E. F. Davies, G. A. Mitchell, J. G. Marr.

**Shortridge: William Hartill,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 194 Coventry Road, Exhall, Nr. Coventry. A. Douglas Jones, T. M. Ashford, C. H. Elkins.

**Smith: Colin John Stickley** [Final], 46 Fassett Road, Kingston-upon-Thames, Surrey. C. W. Box, Frederick Barber, E. A. W. Ixer.

**Squire: James McNeil** [Final], 6 Napier Road, Dover, Kent. G. D. G. Hake, E. H. Button, T. H. B. Burrough.

**Stables: Gordon,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 11 Denton Row, Denholme, Bradford. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Stanford: Alec Alfred** [Final], 92 St. Johns Road, Birkby, Huddersfield. Norman Culley, C. W. Box, S. M. Richmond.

**Stephen: George,** Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 25 Montpelier Park, Edinburgh. E. F. Davies, J. A. O. Allan, J. A. Allan.

**Thomas: Berwyn Harold** [Special Final], 12 Llangorse Road, Cyncoed, Cardiff. Howard Williams, H. T. Rainger, W. J. Rogers.

**Tucker: John Edwin** [Final], 14 Camden Crescent, Bath, Somerset. H. H. Goldsmith, Hugh Bankart, T. W. Snailum.

**Vergette: John Francis,** B.Arch. (Wales) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 24 Sketty Avenue, Swansea, Glam. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Wakely: Robert John Angel,** Dip.Arch. (Nottm.) (Nottingham Sch. of Arch.), 22 Redcliffe Road, Nottingham. F. Marsden, F. H. Crossley, E. H. Ashburner.

**Wakelin: John Kenneth,** Dipl.Arch. (Oxford) (Sch. of Tech. Art and Commerce, Oxford: Sch. of Arch.), 9 Carlyon Road, Alperton, Wembley, Middlesex. J. R. Tolson, E. A. L. Martyn, David Beecher.

**Whitwell: Terence,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 11 Griffe Drive, Wyke, Bradford. Hubert Bennett, A. W. Glover, Spencer Silcock.

**Williams: David Newton,** B.Arch. (Wales) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 12 Theodore Road, Port Talbot, Glam. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Williams: Dewi Wyn,** B.Arch. (Wales) (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 11 Queens Road, Criccieth, Caernarvonshire, N. Wales. Lewis John, Dr. T. A. Lloyd, C. F. Jones.

**Williams: Reginald Victor** [Special Final], 12 Mount Pleasant Road, N.W.10. G. M. Adie, C. W. Box, F. C. Button.

**Williamson: (Mrs.) Sheila Rosemary,** Dip.Arch. (Abdn.) (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 42 Hartington Road, Aberdeen. A. G. R. Mackenzie, J. G. Marr, E. F. Davies.

**Winters: Eric Roy** [Final], 22 Lauriston Road, Brighton, Sussex. K. E. Black, Alwyn Underdown, H. H. Ford.

**Wood: Alfred Arden,** Dipl.Arch. (Leeds) (Leeds Sch. of Arch.), 29 Rowney Gardens, Sawbridgeworth, Herts. W. A. Eden, D. A. Fowler, Frederick Gibberd.

**Wren: Walter Douglas** [Final], 'Artemis', Four Acre Avenue, Downend, Nr. Bristol. E. H. Button, A. F. French, T. H. B. Burrough.

**Yarsley: Donald James,** Dip.Arch. (Birm.) (Birmingham Sch. of Arch.), 323 Marston Lane, Nuneaton, Warwickshire. A. Douglas Jones, T. M. Ashford, A. R. Young.

## ELECTION: 5 MAY 1953

An election of candidates for membership will take place on 5 May 1953. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday 25 April 1953.

The names following the applicant's address are those of his proposers.

AS FELLOW (1)

**Dhar: Dwarka Nath,** Dipl.Arch.(U.C.L.) [*A* 1940]. King George Avenue, Kashmir House, New Delhi, India; 134–135, Pataudi House, New Delhi. Walter George, R. L. Gehlote, N. B. Shroff.

AS ASSOCIATES (12)

**Bartlett: Kenneth Lindsay,** B.Arch. (L'pool) (Liverpool Sch. of Arch., Univ. of Liverpool). The Dept. of Architecture, The Rice Institute, Houston, Texas, U.S.A. Prof. L. B. Budden, Prof. R. Gardner-Medwin, Prof. Gordon Stephenson.

**Bhamani: Tajuddin Mohamed** [Final], Block No. 17, 2nd Floor, Coronation House, Wilson Street, Karachi 3, Pakistan. S. S. Reuben, S. H. Parelkar, H. N. Dallas.

**Braithwaite: Eric,** Dipl.Arch (Leeds) (Leeds Sch. of Arch.), Apt. 211, Unit 1, Amedio Garden Court, 415 Lakeshore Road, Mimico, Ontario, Canada. Noel Pyman, N. H. Fowler, W. H. King.

**Brown (Mrs.) Alison Cecelia,** B.Arch. (L'pool) (Liverpool Sch. of Arch., Univ. of Liverpool), P.O. Box 890, Nairobi, Kenya. Prof. L. B. Budden, G. B. E. Norburn, E. D. Hill.

**de Villiers: Bernard Muller** (Passed a qualifying Exam. approved by the I.S.A.A.), No. 1, Bexham, Penrith Road, Wynberg, Cape, S. Africa. R. F. R. Day, H. L. Roberts, Prof. L. W. T. White.

**du Plessis: Eben,** B.Arch. (Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), 318 South Kingsley Drive, Los Angeles, 5, California, U.S.A. Applying for nomination by the Council under Bye-law 3 (*d*).

**Graham: Alan Douglas Francis,** B.Arch. (C.T.) (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Messrs. Pallett and Price, P.O. Box 272, Salisbury, Southern Rhodesia. Prof. L. W. T. White, O. Pryce Lewis, W. F. Hendry.

**Hoal: Peter Trelawney,** B.Arch. (Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Messrs. Rinaldi & Reynolds, Roslin House, 38 Baker Avenue, Salisbury, Southern Rhodesia. R. C. Rinaldi and applying for nomination by the Council under Bye-law 3 (*d*).

**Kaplan: Morris,** B.Arch. (Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), c/o Messrs. Cooper & Hellmann, 216 Charter House, Rissik Street, Johannesburg, S. Africa. Applying for nomination by the Council under Bye-law 3 (*d*).

**Payne: Lucas Hilary Herbert** [Special Final], Prospect Chambers, Hornby Road, Fort, Bombay, India. G. B. Mhatre, S. H. Parelkar, H. N. Dallas.

**Pradhan: Moreshwar Vasudeo** [Special Final], c/o Messrs. Ballardie, Thompson and Matthews, Wellesley House, 7 Wellesley Place, Calcutta, India. Bernard Matthews, J. R. Talpadé, C. J. Parker.

**Sandenbergh: Johannes Wessels,** B.Arch. (Rand) (Passed a qualifying Exam. approved by the I.S.A.A.), c/o The Registrar, I.S.A.A., P.O. Box 7322, Johannesburg, S. Africa. Prof. A. L. Meiring and applying for nomination by the Council under Bye-law 3 (*d*).

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# Members' Column

*This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.*

## APPOINTMENTS

**Mr. Norman H. Oatley** [*L*] has been appointed Architect to The London Hospital. His office will be at 23 New Road, E.1 (BIShopsgate 3255), where he will be pleased to receive trade catalogues, etc.

**Mr. W. R. Tocher** [*A*] has been appointed County Architect to the County Council of the County of Argyll. His address is County Offices, Dunoon, Argyll.

**Mr. J. Lewis Womersley,** A.M.T.P.I. [*A*], Borough Architect and Town Planning Officer, Northampton, has been appointed City Architect, Sheffield, and takes up duty at the Town Hall, Sheffield, 1, on 2 February 1953.

## PRACTICES AND PARTNERSHIPS

**Sir Thomas Bennett,** C.B.E. [*F*], **Mr. Morris L. Winslade** [*F*], **Mr. Philip Bennett** [*A*] and **Mr. W. Bonham Galloway** [*A*] have taken

**Mr. George W. Bowes** [*A*] into partnership as from 1 June 1952. The practice will continue under the style of **T. P. Bennett and Son**, at 43 Bloomsbury Square, London, W.C.1.

**Mr. Roy Bordoli** [*A*] is now in practice in association with **Mr. Graeme Barker** [*A*] at Lotus House, Whitehouse Road, Nairobi. He will be pleased to receive trade catalogues, etc., at P.O. Box 3238, Nairobi.

**Mr. Vincent Burr** [*L*] has taken into partnership his two associated architects, **Mr. Edmund G. Harker** and **Mr. John J. Hickie,** and will now practise under the style of **Vincent Burr and Partners.** The address, 85 Gower Street, W.C.1, remains unchanged.

**Mr. William C. Cassé** [*L*] has acquired the practice of **Messrs. Pratt, Blount and Cooper** [*L*], 174 High Street, Acton, W.3 (ACOrn 0860).

The practice of the late Mr. C. Howard Crane at 7 Buckingham Gate, S.W.1, is being carried on under the style of **C. Howard Crane and Partners,** at the same address, the partners being **Mr. M. R. Beckstrom, Mr. John B. Guise** [*A*], **Mr. A. T. Davies** and **Mr. W. J. Upfold.**

**Mr. K. Luther Davies,** A.R.I.C.S. [*A*], has given up his post with **Sir Percy Thomas and Son** and has commenced practice on his own at Queens Chambers, 41 High Street, Newport, Mon., where he will be pleased to receive trade catalogues, etc. (Newport 2542).

**Mr. James D. Ferguson** [*A*] has commenced private practice at 16 North Avenue, Cambuslang, Lanarkshire, where he will be pleased to receive trade catalogues, etc.

**Mr. D. O'Neill Flanagan** [*A*] is now in practice at 12 O'Connell Street, Waterford, and 35 Patric Street, Kilkenny. He will be pleased to receive trade catalogues, samples, etc., at both addresses.

**Mr. Basil Z. Gillinson** [*A*] is now in practice at Russell Chambers, Merrion Street, Leeds, 2.

**Mr. G. A. Halse** [*A*] has begun private practice at The Hermitage, Vicarage Road, Sidmouth, where he will be pleased to receive trade catalogues, etc.

**Mr. Joseph Mendleson** [*A*] has opened an office at 15 Hanover Square, W.1 (MAYfair 9611), where he will be pleased to receive trade catalogues, etc.

**Messrs. Symington, Prince and Pike** (Mr. W. J. Prince [*F*] and Mr. M. W. Pike [*F*] have now incorporated the practice of **Stockdale Harrison and Sons,** 7 St. Martins East, Leicester. All communications should be addressed to **Symington, Prince and Pike,** at their new address, De Montfort House, 1 De Montfort Square, Leicester.

**Messrs. Taylor, Leapingwell** (Mr. John Taylor [*A*] and Miss Jane Leapingwell [*A*]) have now opened an office at 18 Hill Street (First Floor), St. Helier, Jersey, C.I. (Central 732), and will be pleased to have callers, trade catalogues, etc.

**Mr. Richard Tyler** [*A*] has begun practice on his own account. For the time being his address is Western House, Stansted Mountfitchet, Essex (Stansted 3225).

**Messrs. Westwood, Sons and Harrison** [*FFF*/*A*] have taken into partnership as from 11 November 1952, **Mr. E. Gilbert Chapman,** A.A.Dipl. [*A*]. The name of the firm remains unchanged and the practice will continue from 46 Baker Street, W.1.

## CHANGES OF ADDRESS

The new address of **Mr. Henry L. Bloomfield** [*F*] is c/o Messrs. Palmer and Turner, P.O. Box 771, French Bank Building, D'Almeida Street, Singapore.

The new address of **Mr. J. H. C. Brown** [*A*] is 26 Manchester Road, Nelson, Lancs.

**Mr. Frank Chippindale** [*F*] has moved to the Leeds School of Architecture, 43A Woodhouse Lane, Leeds, and 24 North Grange Road, Leeds, 6, where he will be pleased to receive trade catalogues, etc.

**Mr. Leonard Elliott** [*A*] has removed his office to 15 Upper Grosvenor Street, W.1 (MAYfair 0968–9), where he will be pleased to receive trade catalogues, etc.

**Mr. W. E. Graham** [*A*] has removed to 701 Avenue I. North, Saskatoon, Saskatchewan, Canada.

**Mr. C. T. Gibson Henry** [*A*] has joined the American architect, **Mr. Benjamin K. Polk,** with whom he will work in association in Pakistan. His address will be Hotel Metropole, Karachi, Pakistan, where he will be pleased to receive trade catalogues and up-to-date literature in connection with materials and equipment for hospitals, schools and industrial buildings.

**Mr. Geddes Hyslop** [*F*] has removed to 5 Canonbury Place, N.1. (CANonbury 3548).

**Mr. H. W. Kelham** [*A*] has removed to 31 Broad Street, Stamford. The telephone number, Stamford 2181, remains unchanged.

**Mr. G. R. A. Mack** (*A*) has removed his office to National Provincial Bank Chambers, 11 Market Place, Louth, Lincs.

**Mr. Wilfred E. Mills** [*A*] has removed to 'Greenacres', 90 Gilhams Avenue, Banstead, Surrey, where he will be pleased to receive trade catalogues, etc.

**Mr. Malcolm L. Mitchell** [*A*] has removed to 34 Alexandra Grove, Finchley, N.12, where he will be pleased to receive trade catalogues.

The new address of **Mr. R. J. H. Nathaniels,** Dipl. Arch. [*A*] is c/o Messrs. Mortimer, Firkin and Degiorgio, Via G. Garonne 14, Tripoli, Libya, where he will be pleased to receive trade catalogues, etc.

The new office address of **Mr. W. H. Quemby** [*L*] is 'Falkland House', 27 Brighton Road, Sutton, Surrey.

**Messrs. John S. Scott** (*A*/*A*) have removed to Chilson, Charlbury, Oxfordshire. Until the telephone is available at the new address, the office is being retained at Milton-under-Wychwood, where the telephone number Shipton-under-Wychwood 277 remains unchanged, but between the hours of 9–11 a.m. and 2–4 p.m. on weekdays only.

**Mr. William Taylor** [*A*] has changed his address from 4 Jesmond Gardens, Newcastle-upon-Tyne, 2, to The School of Architecture, Cowley Place, Oxford.

## CHANGE OF TELEPHONE NUMBER

The telephone number of **Mr. J. A. Roberts** [*A*] of 61 Sandon Road, Edgbaston, Birmingham, 17, has been changed to Bearwood 3806.

## PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

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Associate (Australian), B.Arch.(Melb.), at present on tour in U.K., extensive industrial experience, seeks partnership or position leading thereto. Box 92, c/o Secretary, R.I.B.A.

## FOR SALE

Office furniture, including large table, letter press, large plan press for sale; also London Ordnance Sheets, etc. Box 2, c/o Secretary, R.I.B.A., or telephone Larkswood 1851.

## ACCOMMODATION

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## MISCELLANEOUS

**Mr. N. K. Purnell** and **Mr. A. L. H. Pratt** (*A*/*A*), who are at present holding official appointments under the Imperial Ethiopian Government, will be pleased to receive trade catalogues with particular reference to the equipment of Universities (faculties of Medicine, including Dental Surgery, Science, Education and Fine Arts) at P.O. Box 1226, Addis Ababa, Ethiopia.

*The Royal Institute of British Architects, as a body, is not responsible for statements made or opinions expressed in the* JOURNAL.

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